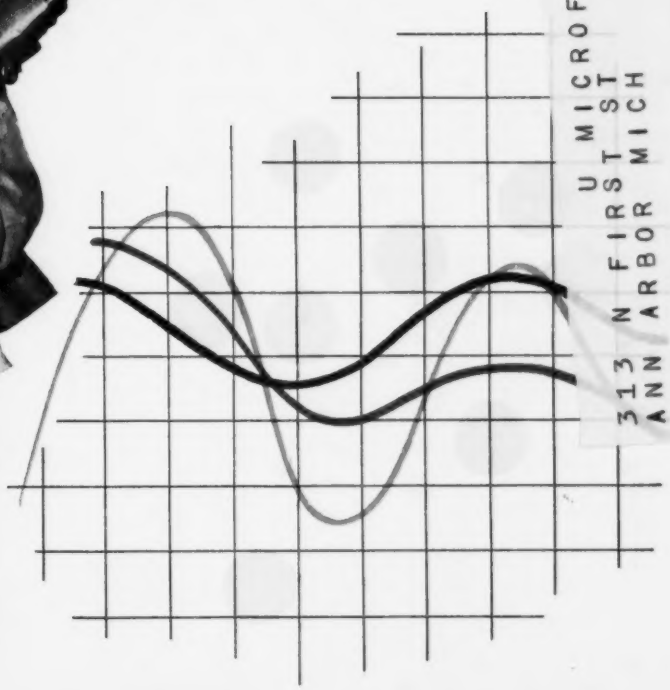
ARMY

SEPTEMBER 1959 • 60¢



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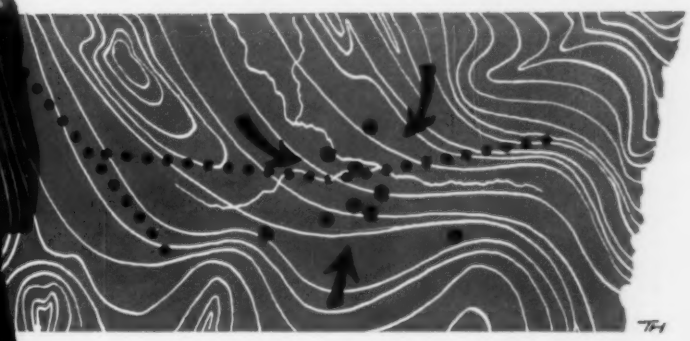

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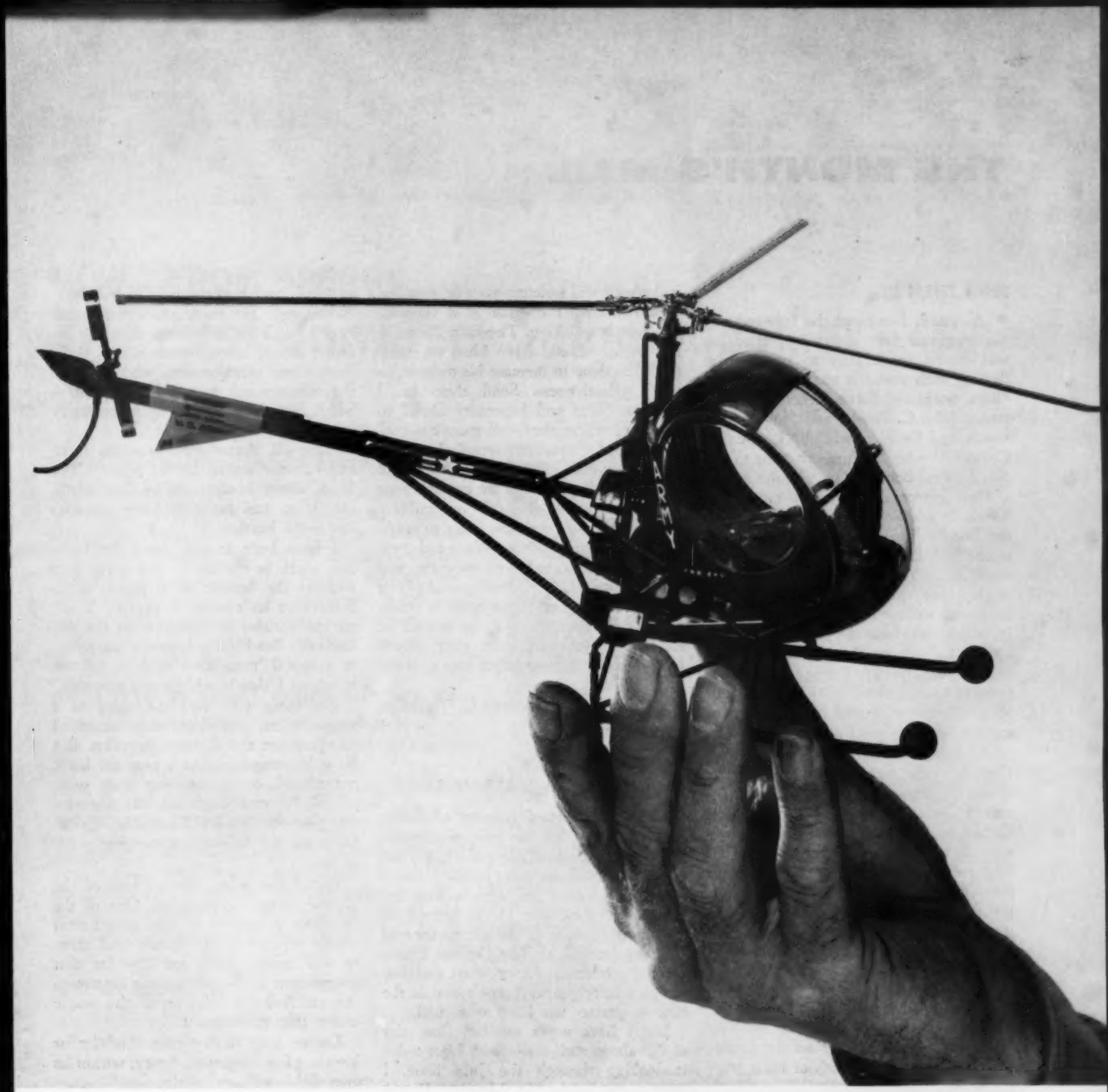

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THE MONTH'S MAIL

SEND THEM IN

• As usual, I enjoyed the July issue of our magazine very much. My attention was drawn particularly to two articles dealing with research and development: "Boot, Socks and Battle Jackets" by Lieutenant John C. Reade, and "Job for Research and Development" by Lieutenant Colonel Wesley J. Curtis. I want to say that I found both articles stimulating.

Having recently served 16 months in Korea, in addition to being there during the late "police action," I must say that to the 50,000 Americans under my command, the Army's latest field clothes worked out splendidly, albeit improvements can and are being made. Incidentally, within days from the publication of his article, Lieutenant Reade found himself at the Quartermaster Research and Engineering Command at Natick, Massachusetts, where we invited him in order to explore his ideas more thoroughly.

As for "Sergeant Opps," in Colonel Curtis's article, we're still waiting for the "facts, figures and sketches" that "Lieutenant General Thomas" asked him for. Or maybe "General Thomas" just hasn't sent them in to us. We would like to hear more from all the Opps and Thomases (particularly the doubting ones) in the Army whether they are sergeants or generals. There are more than 1,500,000 men and women who make up this Army during all or part of the year and we need their ideas. Those of us primarily engaged in research and development are doing our best to get you every possible advance to insure victory on the battlefield; but there is a dearth of ideas from the field.

If channels don't seem to work, I know the chief of every technical service as well as General Clarke in USCONARC and myself will welcome your suggestions. Research doesn't operate in a vacuum, figuratively speaking. The man closest to the enemy should have ideas on what might be done to increase his own or his unit's effectiveness. Send them in. I have an "Idea and Ingenuity Desk" in my office where they will receive a considered and sympathetic appraisal.

In these days of explosive advances in science and technology, we can leave no stone unturned to maintain our military supremacy. We need new ideas to establish new requirements. We need new requirements in order to program and fund our research and development efforts better. We need new end items to retain qualitative superiority in our arsenal of military equipment. Turn your growls into graphs and your gripes into grist for the R&D mill.

LT. GEN. ARTHUR G. TRUDEAU
Chief of R&D, DA
Washington, D. C.

OBJECTIONS TO 'PATRON SAINT'

• The statement of purpose of ARMY which appears on the title page states that it is "a professional publication devoted to the advancement of the military arts and sciences and representing the interests of the *entire* U. S. Army."

I have been a subscriber to the old Infantry Journal, to The Combat Forces Journal, and now ARMY, man and boy for over forty years. ARMY today is the best magazine we have ever had.

But I have never received from any of the above such a shock as I got today in looking through the July issue. I refer to the article, "St. Maurice: Patron Saint of Infantrymen."

Do not "the military arts and sciences" offer sufficient scope but that ARMY has to splash over into the field of religion?

You say, "For many years correspondents have been telling us that the infantry should have a Patron Saint." Well, here is one correspondent who tells you the infantry has no need for a Patron Saint. Period. There will undoubtedly be others.

After all, ARMY represents the interests "of the entire U. S. Army." The U. S. Army is composed of Protestants, too, Jews, and probably some agnostics and even heathen.

I have been in the Army for forty-two years, in combat in two great wars without the benefit of a patron saint. Sometimes in combat I prayed. There are no athiests in foxholes, as the fellow said. But I did not need a magazine, or a medal 'round my neck to tell me to whom I should address my prayers.

For those who feel the need of a patron saint, complete with medal, I interpose not the slightest objection. But let it be completely on a personal basis, not official, or in any way even semi-official. For your magazine—our magazine—to promote the idea of an official Patron Saint for the infantry is completely out of line.

Our Army is an integral part of the United States Government. One of the founding principles of that government is the separation of church and state. It will indeed be a sad day for that government if the principle is ever overthrown. And a sad day for all the people under that government.

Let us keep it that way. And let us keep our fine magazine, ARMY, within its own field—military affairs.

BRIG. GEN. EDWIN H. RANDLE
Clearwater, Fla.

• Colonel Fawcett states in his second paragraph that "She [St. Barbara] is the symbol that all artillerymen, regardless of rank, recognize." For his information I have been associated with coast, field, and antiaircraft artillery since 1938 and have served on active duty in both World War II and the Korean fracas, and in all this time, with seven years' active duty thrown in, I have yet to hear of St. Barbara in association with U. S. artillerymen of any brand. I have soldiered with many active, practicing Roman Catholics in the artillery, but never have I heard mention of this "Patron Saint." Roman Catholic chaplains assigned to my ar-

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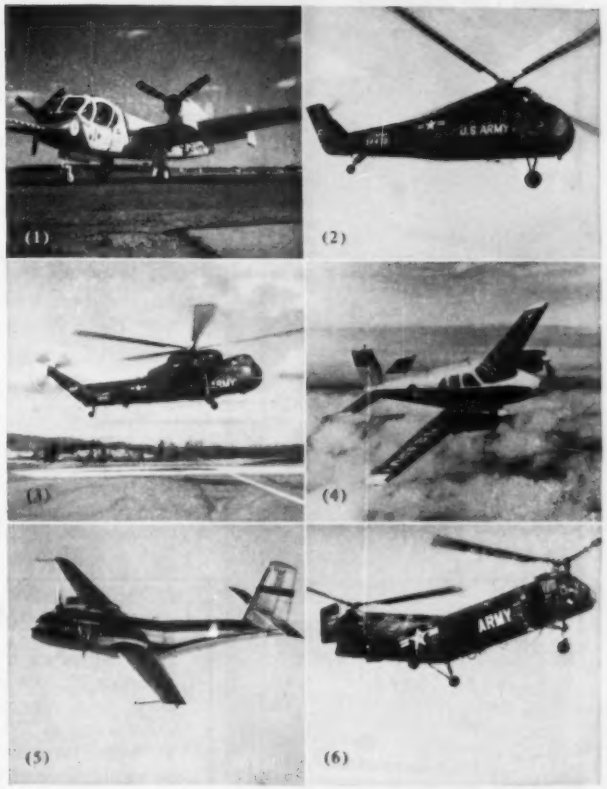

(1) Grumman YAO-1 Mohawk (2) Sikorsky H-34 Choctaw (3) Sikorsky H-37 Mojave (4) Beech L-23 Seminole (5) De Havilland YAC-1 Caribou (6) Vertol H-21 Shawnee

SPERRY

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tillery units have been good, sometimes close friends, but they never once mentioned Saint Barbara, whoever she is.

Referring to the editor's note, it states in its final sentence, "Infantrymen will be interested to know that *the Church* has authorized a Saint Maurice medallion." For your information, the obvious reference to the Roman Catholic Church as *the Church* is personally resented by me as a practicing Protestant.

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In conclusion, I wish to request that the Editors withdraw the inference in the editor's note re *"The Church"* and believe, that this letter should be published to explain the position of the *majority* of the U. S. Army who are not affiliated with the Roman Catholic Church.

Please sign this . . .

PROTESTANT CHRISTIAN

Wilmington, Del.

• The publication of such an article appeals to only a small percentage of the military and is in very poor taste for a magazine speaking for an organization devoted to the protection of a government and nation founded and nourished upon the principles of religious freedom and separation of Church and State.

I understand that the Department of the Army has issued a letter stating it is DA policy "that the religious beliefs of individual members be encouraged and strengthened, and that the religious beliefs of any one organization will not be imposed upon individuals of other beliefs."

There has long been a need for an Association of the U. S. Army. Now that we have a working organization let it stick to its purposes and first of all truly represent the Army and its members.

CAPT. RAYMOND N. HALSTEAD

Ft. Eustis, Va.

• *The promotion of a particular religious faith or creed is certainly far outside the bounds of the mission of* ARMY *magazine.* ARMY *does not consider the religious beliefs of its readers any of its business. We regret that Colonel Fawcett's article and the accompanying editorial note led some readers to think differently. In selecting the article for publication,* ARMY *magazine did not think of it as a "religious" article, but as one of some historical interest and one that also might have certain esprit values.* —THE EDITORS.

MOVING?

Don't let us be a part of that notorious 3% that doesn't get the word. Send your change of address notice to ARMY, 1529 18th St., N.W., Washington 6, D. C. Be sure to give us your OLD address—EXACTLY as it appears on your latest issue, please—as well as your new address, including postal zone. Also, let us know when your change is to be made effective.

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TI PROGRAM

• I second Mr. Finberg in his article "Troop Information: Waif of Command" [June].

Generally speaking, he is so right! The potential of the Troop Information Program has always been tremendously important. Actual performance, however, usually has been less than good. Mr. Finberg has pointed that up very nicely, and I will not attempt to embellish his remarks.

My experience in this field has been quite extensive, and I know whereof I speak. Back in 1945, after returning to the ZI as a "permanent limited service officer" after 18 years of working up from private to combat battalion commander, I was diverted into I&E work. First as an educational reconditioning officer trying to retread, or at least rehabilitate, psychoneurotics, and then into the several levels of I&E assignments, including a pleasant stint as Chief of Education, Army Field Forces, at the Pentagon.

One of my most valuable tours was as senior I&E noncommissioned officer of U. S. Army Alaska after I was RIFed from captain to master sergeant. My work, in coordination with some very capable I&E people up there in Alaska, was instrumental in getting me back on EAD as a major and a Reserve promotion to lieutenant colonel.

These references to myself are meant to show that in some places—most places, in fact, conscientious effort by I&E personnel did (and still does) pay off, and is not unappreciated by commanders who are responsible for the program.

Far more important, of course, are the rewarding results that can accrue to the units that support an I&E program to the extent that it becomes an essential tool of command.

It takes a lot of selling to bring an ideal information program into being. I know, because I've been through every phase of it. However, you can be assured that the Troop Information Program is receiving more than adequate attention at high commands. Where it begins to fall down is at division or below. Often that is because the various commanders do feel, as Mr. Finberg points out, that they are too busy to keep the troops informed. This in spite of statistics that prove a corollary between superior units and their superior information programs. You can't have one without the other, it seems.

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The New U.S. Army L-23F Transport

As spectacularly new as it looks, the new L-23F has an entirely new fuselage that is longer, wider and higher inside than the L-23D and includes a separate pilot compartment and air-stair door.

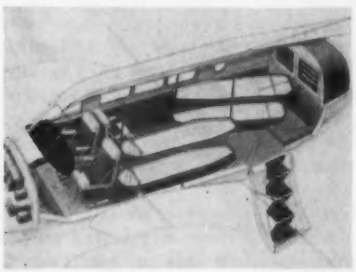
Never before has any airplane offered so many pleasant surprises —and still retained every desirable feature of its predecessors.

In addition to its extra roominess, comfort, privacy, quiet and almost unlimited versatility, the new L-23F is a pilot's dream.

With supercharged fuel injection engines, the L-23F has performance capabilities never before possible with carburetor engines of similar horsepower. It's smoother, too, and frees you completely from icing due to fuel vaporization. More precise fuel metering lets you calculate fuel consumption more accurately, and gives you longer range and greater fuel economy.

Other Beechcraft projects today include research and development work on launching and recovery systems for missiles, drones, and manned aircraft; target and reconnaissance aircraft; ground support equipment; and classified projects in the advanced fields of aerodynamics, cryogenics, thermodynamics, and aircraft range extension.

Sliding doors separate the pilot compartment from the cabin. The roominess of the cockpit is shown by the wide center aisle. With plenty of room for instruments and radio, adjustable crew seats and excellent flight characteristics, the L-23F is the talk of military pilots who have flown it.



All cabin seats can be removed in minutes to convert the L-23F to a flying ambulance, a cargo-hauling aerial packhorse or a flying "bus." One arrangement seats eleven people.

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As a rifle company commander who had the rare privilege of training a National Guard unit for more than two years and then leading it through one of the toughest campaigns of any war—Buna—I realized the real value of "keeping the troops informed" even before a formal system was devised. The men, and officers too, demanded it then. So now I wonder when someone claims that troops are bored with it all. I don't think every one always is. And if they all are, there must be something terribly wrong with the presentations.

Experience proves that to be a good I&E man (I can never separate Information from Education in my mind, for they overlap) you must have a pretty broad military background, a fair formal education, common sense, and above all, a highly developed missionary complex—a dedicated sense of mission, as the good books express it.

MAJ. RUSSELL A. BRONER
Sioux Falls, S.D.

• I am sure Mr. Finberg will be happy to know that not all Troop Information is relegated to the lowest priority.

The nine Special Units of Headquarters, Fort Richardson, Alaska, receive Troop Information on the same level and with the same command supervision as all other mandatory training. Key noncommissioned officers are not excused, but are used for presenting their broad experience and background, as appropriate. Lesson plans are prepared for each subject, with emphasis on the use of training aids and suitable training films correctly introduced, summarized, and critiqued. Everywhere possible, practical application and class participation are paramount.

TI classes are scheduled in larger units with anywhere from one fifth to one third of the units in attendance, so as not to interfere with routine daily functions of post activities. Command supervision emanates from the post commander to the troop commander who physically visits at least 80 per cent of each information session weekly, checks lesson plans, and determines the effectiveness of instruction, proper use of training aids, and conduct of the class. At least one company officer is present at each session.

I fully agree with Mr. Finberg that the Troop Information Program has not had the command supervision it deserves, and that an effective Troop Information Program is most important to today's Army. But we know that Fort Richardson is one post where the program is being properly presented.

LT. COL. MAURICE K. SCHIFFMAN
Fort Richardson, Alaska

• Mr. Finberg's article on the Troop Information Program, or lack of it, was very good, and calls to mind a couple of outfits where I've been.

The year 1952 found me with my home town National Guard outfit in the wilds of Louisiana. Our unit commander put the TI program in the hands of our most skillful bull artist, a warrant officer. This WO put much thought into his talks, and he really had to. Many of the audience had returned from Korea, with a few months to go, and had little interest in their duty.

One night we assembled for a chat and the WO ascended the platform and began to read a schedule for the future that sounded like a plan to outdo Dachau. "This schedule goes into effect tomorrow. Any questions?" Someone stood up in the rear and yelled, "I don't like a bit of it!" *"Guards!"* thundered our WO in his loudest bellow. Two MPs ran up, dragged the objector out, kicking and yelling.

Shortly came a pistol shot. The WO turned to his thoroughly awakened audience and asked, "Any more questions?" No comment. "Having done it the Russian style, let's try it our way," and his spiel was on.

Another time, our subject was behavior in allied countries. A simulated bar was the scene. Two simulated natives were simulating drinking. In staggered three American soldiers, looking like The Wrath. They insulted the bartender and guest, cast aspersions on the virtue of passing women, tried to buy all the wine in the place, and left making wolf whistles. Comment by the simulated natives: "Pigs!" Then in came our speaker.

Finally, it got so that it was unnecessary to herd all the outfit to attend a lecture. That left us free to round up the real deadbeats, but not all of them. It took time to set up lectures like this, but our TI warrant officer did his best. He got results, too. He made a recruiting spiel so good the company clerk signed up in the RA, and there the lad is to this day, a credit to a No. 1 sales talk. Any more questions?

The material is good, but the best use of it isn't always made. If those responsible will look around, they may find people who can really put it across. But one thing to remember is that old mule trainer's joke. To instruct a jackass, one must first know more than the jackass. Inept information personnel are worse than none.

It seems to me that the powers could reduce the amount of stuff coming down to us. A small dose of essentials properly put across is worth one hour a week for a year done poorly. TI material on foreign countries could be reserved for those about to go there, with a special-event spiel for hot spots, such as Tibet. Follow-ups from the higher bracket should be done only on the most important subject. If someone had checked us in 1943, my old outfit would have been in for a lot of talk, and the CO up

VOUGHT VOLUNTEERS FOR ARMY RESEARCH

Army equipment once ran mostly to brass, steel and leather. Today's soldier needs are not so simple.

Miniaturized electronics. Nuclear power. Super alloys. Advanced optics. The Army is striving to make this standard equipment for today's soldier-specialists. The modern Army is making headlong advances in new arms and techniques. It's a fluid research front, familiar to Chance Vought's weapon specialists. They have volunteered their experience to Army researchers.

Vought is a "regular" in weapons development. Every year since 1919, the U.S. Military has been equipped with at least one Vought weapon. To its capabilities in manned aircraft, missiles and electronics, the company recently added contract responsibility for integration of NASA's "Scout" space research rocket.

Vought has pioneered and delivered the most advanced weapons. Accompanied by support equipment, indoctrination specialists and fast-acting Field Service, these weapons were *effective systems* immediately on receipt. This experience is being offered the Army in several new research areas.

Battlefield weapons, along with anti-submarine warfare, missile and piloted aircraft developments, are specialties in Vought's Aeronautics Division. Other major interests are being aggressively advanced in the company's Astronautics, Electronics, Research, and Range Systems Divisions.

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DALLAS, TEXAS

ARMY

"How fast will it move?" This is one of the questions the modern U. S. Army asks first about new equipment. This is critical in the swift Army units that constantly train themselves to move even faster. Speed is the modern U. S. soldier's equalizer. It helps him overcome great distances in his world-wide watch over potential trouble areas. It can help him offset an aggressor's advantage in numbers. Equipment that can accompany, arm and sustain this fighting man anywhere on the globe is essential. In trained Army hands it will mean defense on the double – any time, any place!

CHANCE VOUGHT
DALLAS, TEXAS

AERONAUTICS | ASTRONAUTICS | ELECTRONICS | GENESYS CORP | RANGE SYSTEMS | RESEARCH

for a scorching. No one checked. If the paper we got had come in properly perforated form it would have been much more useful.

WO JOHN P. CONLON
Newark, Ohio

COLLECTIVE HUMAN EFFORT

● For thirty years I observed, experienced, and read about the content of Captain Bashore's "The Ties That Bind" (February), Colonel Austin's "Management's Self-Inflicted Wounds" (April), Colonel Curtis's "Pentagon Platoon Leadership" (June) and Bob Bear's "The Soldier's Need to Know" (June).

The cause beneath the symptoms in such writings has always been tacitly assumed to be "the nature of the beast;" responsibility for the situations cannot be fixed; and the field is always open for exposures which cannot trample on any toes.

Today, the theme of the writings I have referred to is the same as it was thirty years ago. If a cause is not found, or if a crisis-forced change has not intervened, it will be the same thirty years hence.

The cause lies in the choice between two views of collective human effort. It can be viewed as a collection of individual humans or it can be viewed as a collection of individual efforts.

Plato took the first view in 400 B.C. His model of the internal arrangement of a collective was "one man writ large." It was for a pastoral era simplicity in a slave society where two classes of people were assumed: one class possessed the power of reason, the other did not.

Plato's model has continued into the twentieth century. Today it is worded differently: "The lengthened shadow of one man," or "There are no bad companies, only bad company commanders." The two classes of people are now called "officers" and "enlisted men."

Somewhere along the line we forgot that Plato's pastoral simplicity had changed to a twentieth century complexity. And, commencing with compulsory education in the sixteenth century, man began to find that all men have the power of reason, not just a select few.

Inside Plato's model, the internal arrangement of people and functions starts from an assumed primacy of personality. Under this primacy, the internal and governing structure is an invisible network of personal tensions, often called "a can of worms." The key personality in the network tries to make it function by sending the force of his "will" through the network. This is also called "leadership;" that is "getting things done through people." Functions become attached to points in the net by evolution, by chance or by personality attraction. The dictionary definition of "conglomeration" fits this internal arrangement of people and functions. It is not "organization" because "system" is implicit in the true meaning of "organization," and there is nothing systematic about a network of personal tensions.

Plato's model cannot work effectively in the twentieth century. One man can no longer write himself large enough or cast his shadow far enough because the human mind can no longer have within it the totality of knowledge as it could in a pastoral or an agrarian civilization. But in the twentieth century, to offset this lack, we have a general education of all men, and there is reason to have faith in the individual, that he will do the right thing when he knows what is expected.

When the Army's doctrine displaces Plato's 400 B.C. model with American football's twentieth century model, then its "conglomerations" can become "organizations." When that happens, "the ties that bind" will have become "the ties that facilitate."

The change is not inconceivable. It is possible to deduce universals from the principles that govern the organization of the football team. Universals apply to any "team" of collective human effort, whether it be numbered in the tens, hundreds, thousands or millions.

COL. LELAND B. KUHRE
Academy of Organizational Science
San Antonio, Tex.

THE INTERESTED SOLDIER

● After reading and reflecting on "The Soldier's Need to Know" by Bob Bear, Jr. [June], I'd like to say that I think that article is first-rate and expresses thoughts which often must cross the minds of young soldiers.

I am reminded of my early service in Hawaii when the Army commander at that time insisted that all ranks know the situation at any given moment. Woe to the company commander whose men were unable to respond to the CG's queries posed at midnight in some lonely "front-line" position during an FTX.

Mr. Bear's concluding sentence about the value to the soldier of an understanding of the "big picture" reminds me of how, with such eagerness, I as battalion commander was received on Christmas Day, 1944. On the cold snowy slopes of Elsenborn Ridge east of Verviers, Belgium, I visited individual foxholes of the men of my battalion to wish them Merry Christmas. My brief explanation of the big picture, as I knew it then, was as eagerly received as a Christmas gift.

It is certainly true that the informed soldier is the interested soldier.

COL. ROBERT H. DOUGLAS
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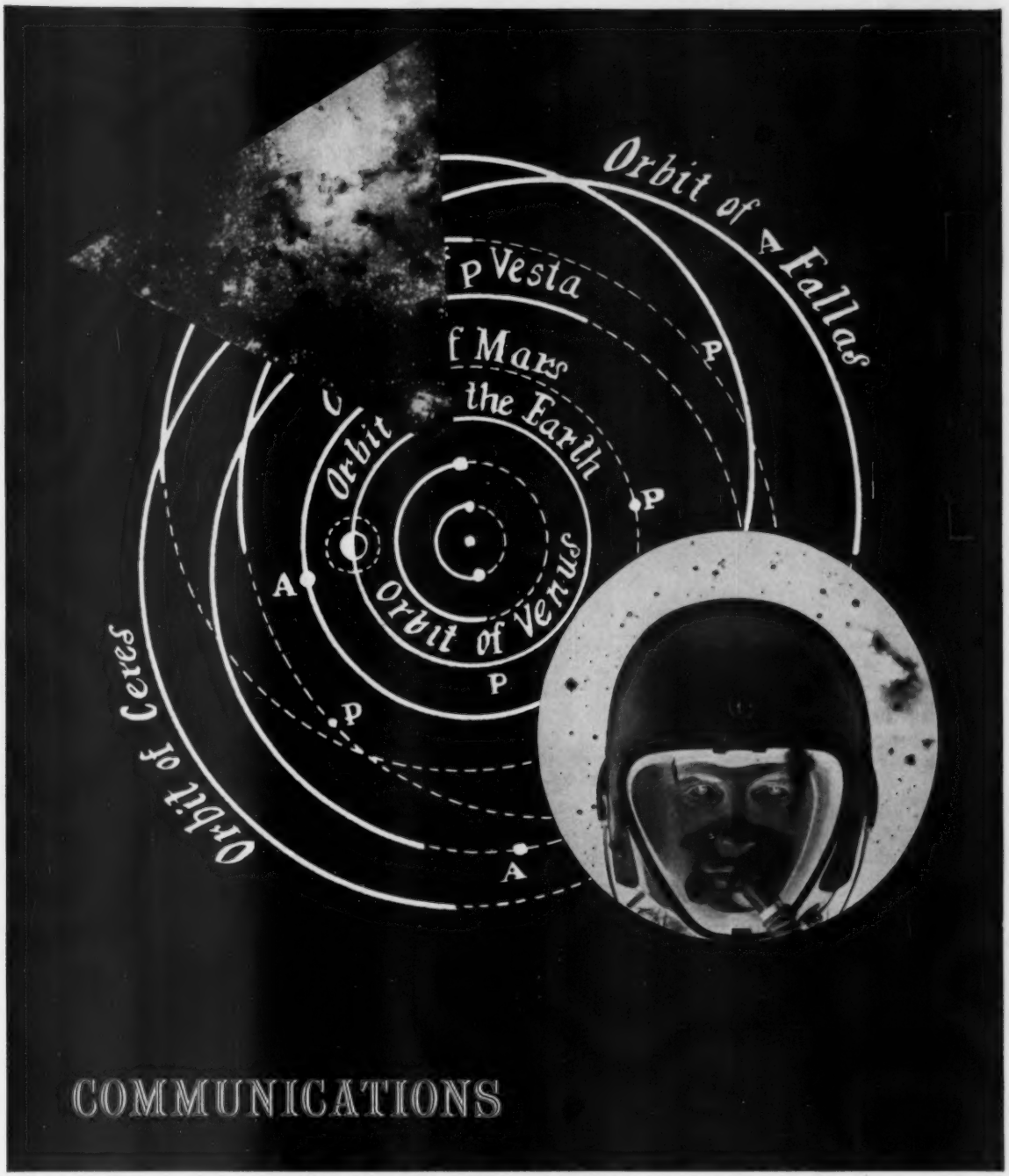

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A PROFESSIONAL PUBLICATION DEVOTED TO THE ADVANCEMENT OF THE MILITARY ARTS AND SCIENCES AND REPRESENTING THE INTERESTS OF THE ENTIRE U. S. ARMY

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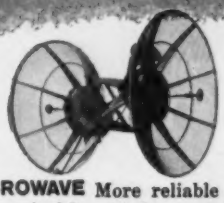

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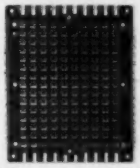

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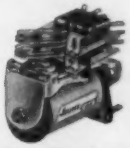

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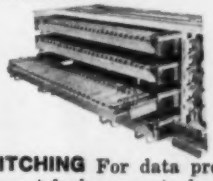

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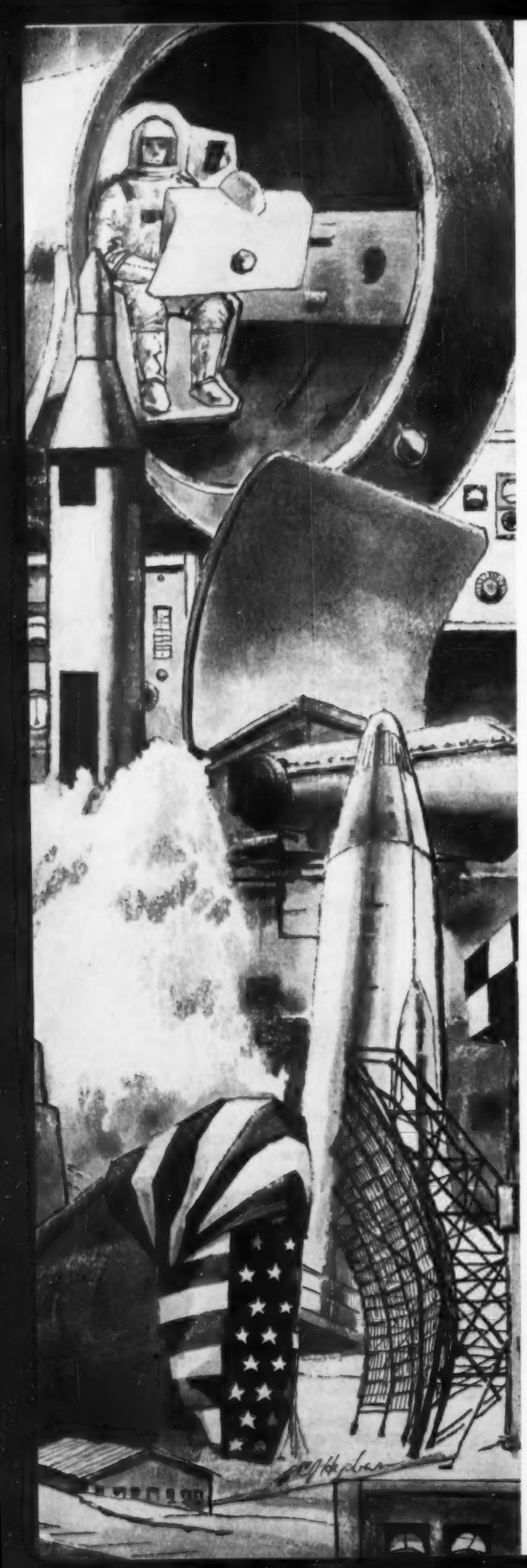

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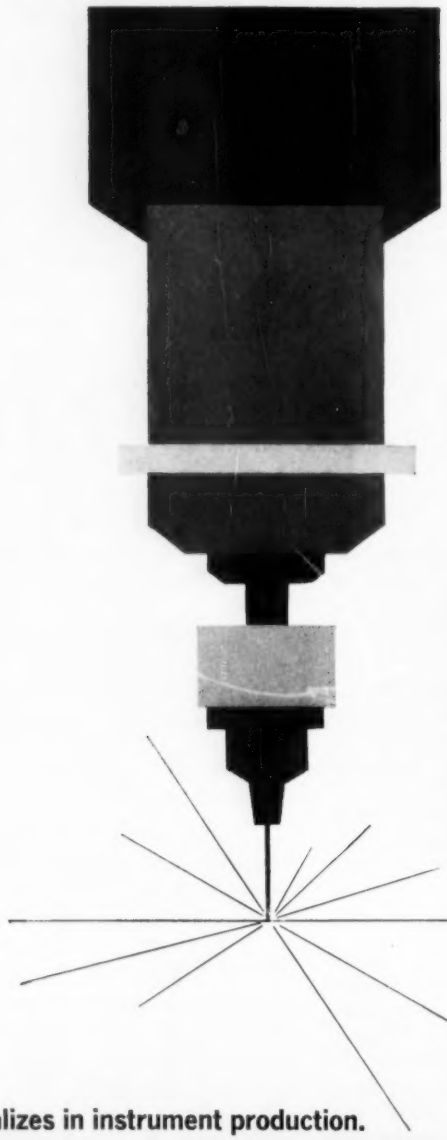

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MODERN ARMY

SEPTEMBER 1959

Why We Need a **MODERN ARMY**

GENERAL
LYMAN L. LEMNITZER
Chief of Staff, U. S. Army

The AUSA is performing valuable services in many ways. This annual meeting in particular is serving a truly worthwhile purpose. It will examine the question of "What is a Modern Army?" Certainly, this is a matter which is of the most serious importance, not merely to the Army, but to our Armed Forces and the Nation as a whole. I am sure that the discussions here will contribute in a very large measure to the determination of an accurate, clear, and realistic answer to this vital question.

The task which has been assigned to me at the session this morning is to discuss the subject of "Why We Need a Modern Army."

On the face of it, it might seem that the need for an Army is obvious without discussion. Clearly, since we need an Army, it should be modern. We cannot be behind the times, like a railroad engineer I heard about.

This engineer's train was notorious for being late. In fact, it had never been known to be on time.

Then, one day, to everyone's astonishment, the train came steaming into the station exactly on schedule. The passengers and the railroad officials were delighted. They were so pleased, in fact, that they immediately took up a collection. Then they assembled and presented it to the engineer, accompanying their gift with a speech expressing their appreciation.

Much to their surprise, however, the engineer returned the purse. "I hate to do this," he said, "because I could certainly use the money. But I have to tell the truth. You see, gentlemen, this is yesterday's train."

It is obvious that yesterday's train cannot meet the requirements of a modern Army. Although this is obvious, it is still a good thing from time to time to re-examine subjects which are fundamentally important, even though they concern matters which we are inclined to take for granted.

In re-focusing your attention on this subject today, I shall express a twofold theme. It is, first, that the Army represents a capability which is a major and essential element of our total military power. The second aspect of my theme is that, to provide this capability effectively, the Army must be as modern in leadership, weapons, equipment, personnel skills, and concepts of employment as our wisdom, resources, and energies can possibly make it.

In my opinion, there are a number of very clear reasons which emphasize the particular importance of a modern Army today.

The first of these, which needs no elaboration before this audience, is the Communist threat. I shall merely remind you that it is relentless in its menace and massive in its strength. It is global in its geographical extensiveness. Furthermore, its versatility permits it to take forms which range across the entire spectrum of aggressive activity, from subversion and infiltration to general nuclear war. I think that it is most pertinent to note that the Soviet armed forces—and, in varying degrees, the armed forces of the other Communist nations—have been maintained in strength and have also been the subject of extensive modernization. This is especially true of the Soviet ground forces.

The coming era of strategic nuclear disarmament

In citing a second reason, I want to take a look into the future. Present trends indicate clearly the direction which the development of long-range, strategic weapons is taking. In the coming ICBM era, we can anticipate a day, not too many years away, when our missile retaliatory resources can and must be made so numerous and relatively invulnerable that no missile or other attack upon them, even by surprise, could possibly eradicate them all. This means that our response to the attacker would be absolutely devastating to him—so clearly so that it would be senseless for him to attack in the first place.

When that time arrives, it could bring about, in a curious way, what some have characterized as the *equivalent of strategic nuclear disarmament*. We shall always want, as a vital component of our military power, the invulnerable missile deterrent needed to maintain this situation. With this in being, the situation will then mean, realistically, that the other components of our power will play the vital role in coping with the tactics and strategy of Communism short of the threat of general nuclear war.

These considerations are of vital importance today. In any meaningful planning, we have to take into account, from the beginning, the long lead-time from concept to actual fruition. This requirement for lead-time is obvious in the field of hardware. The requirement for lead-time is even greater in developing the capability to carry out a changed doctrine or strategy. It is greater, because many additional factors are involved. Therefore, we must be keenly aware

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Major General A. J. Drexel Biddle
President, Association of the U. S. Army
Washington, D. C.

It is a pleasure to send greetings to those attending the annual meeting of the Association of the United States Army.

Since the beginning of our national life, the Army has defended the growing traditions of America. Today's Army, deployed both at home and abroad, plays an essential role in the maintenance of world peace with justice and freedom.

The continuing efforts of your Association to emphasize leadership, discipline, and professional skill are in the highest traditions of the military service.

I am delighted to add my best wishes for a fine meeting.

Dwight D. Eisenhower

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that basic decisions made this year—decisions on national strategy or decisions on the budget—will inexorably establish the parameters of our actual capabilities five and more years from now to meet the then existent threat.

Thus, in speaking of the importance of a modern Army, I am not speaking solely of its role today. I am speaking even more importantly of its role in light of the foreseeable nature of the power balance in the world during the next decade.

As a third reason for the importance of a modern Army today, I should like to emphasize two of the key elements of our response to this threat. I refer to the concept of collective security, and to an essential concomitant to its effectiveness—a forward strategy.

The massive strength of the common threat to all free nations makes the need for collective security self-evident. This need is met by the system of alliances to which the United States strongly subscribes today.

As for our forward strategy, it is an inherent ingredient of any positive effort. Through a forward strategy, we are prepared to meet and halt an enemy before his attack can gain momentum. The alternative for us would be to withdraw within our own borders, adopting a so-called "Fortress America" strategy which, by its exclusively defensive character, would be completely negative. Consequently, it would be doomed, from the outset, to ultimate failure.

A forward strategy is also important to the success of collective security. It provides our Allies with firm assurance that we are determined to stand with them against attack. It provides them, moreover, with a sound basis for confidence that the Alliance as a whole can successfully meet the military challenges which may confront it.

Land power—represented, primarily, by the Army—has a vital role in both collective security and forward strategy. You all recognize, I know, that an enemy using military means to extend control over free peoples—not merely to destroy all life indiscriminately—would necessarily base much of his effort on the seizure of land. Land forces are the only means through which, finally, land can be controlled and domination asserted over the people who inhabit that land.

To carry out our responsibility in this regard, the Army maintains forces deployed in strategic areas overseas. There, to our friends and our prospective enemies alike, these forces furnish realistic, visible evidence of our ability to hold firm against attack, not merely to liberate territory after its seizure by an attacker. A modern Army is capable of conquering without destroying, of defending without reducing the defended land to radioactive waste. The physical presence of armed men on the ground can exert more effective and lasting control than the threat of megatons of firepower that may never be used.

In addition to maintaining operational forces, we have an obligation to help our Allies to develop their own military resources to the fullest extent possible. This is a vital part of the U. S. Mutual Security Program. The Army has a special responsibility in this Program. In this connection, I should like to say a particular word about the splendid work being done by the members of the Army's Military Assistance Advisory Groups and Military Missions in 42 countries throughout the world.

In my opinion, it is no exaggeration to claim that they are doing an absolutely tremendous amount to give meaning to the entire concept of collective security. They are helping to develop the basis for effective Allied military operations in case of attack. Beyond this important contribution to the Free World's total military strength, they are helping to reduce or eliminate the possibility of attack through other than overt military means. In assisting the Allied armies to expand their effectiveness, both through improved matériel and increased professional knowledge, our MAAGs and Missions are contributing to a basic element of governmental stability in Allied countries. Stable governments, with capable, well-equipped armies, are not open

to successful attack by such methods as subversion, infiltration, *coups d'etat,* or revolution—all of which are methods which Communism has sought to employ in pursuing its ominous goal. Thus, the Army is strengthening the Free World not only by helping to develop a solid front of effectiveness, but also by helping to strengthen the individual elements of that solid front.

Both through its deployments and its assistance activities, to include the instruction and training of thousands of Allied personnel in Army schools, the United States has come, to a major degree, to provide the source of the latest thinking, tactics, organization, weapons, concepts of operation, and doctrine for all the ground forces of the Free World. As a result, the matériel which our Army employs, and the doctrine and organization through which we employ it, are to a large extent paralleled in Allied armies. The Republic of Korea Army is a well known example of the point which I am making. In varying degrees, the armies of such other nations as Nationalist China, Vietnam, and a number of others also present patterns which are similar to our own.

In this situation there is an advantage which is extremely important. I refer to the sound basis it provides for mutual understanding in professional military matters. There is clearer communication not only with respect to military terminology but also with regard to organization and concepts. Through this asset, and through close association and the preparation of coordinated plans, we have eliminated a major source of the confusion which historically has hampered the operations of allies.

The reasons I have mentioned are, in my opinion, conclusive evidence of the importance of a modern Army. However, there is another reason I want to cite, which in itself is sufficient.

Modern military operations are not restricted to any particular element. The Army must fight as a part of a team which includes forces of the other U. S. Armed Services and those of our Allies. We are all well aware that land warfare is not conducted solely on the surface of the land. It includes the conduct of operations in the air above the land and in the waters contiguous thereto. *In order to carry out its responsibilities with the effectiveness to permit its fellow team-members to realize their own full potentials, the Army must be as modern in its functional area as the U. S. Navy, Marines, and Air Force are in theirs.*

The qualities that make an army modern

Let me turn now to discuss some of the key qualities which make an Army modern.

In order to obtain maximum effectiveness in terms of the essential characteristics of firepower, mobility, and communications, a modern Army requires, first of all, modern weapons and equipment.

With regard to firepower, the Army requires, within its own resources, the versatility to deal with any of the enemy's capabilities which directly affect it. Army weapons have a number of special advantages which should be exploited to the greatest possible extent. One of these which I want to mention is their precision, both in terms of accuracy and of measured lethality. This gains added importance in the light of their reliability, which permits them to deliver their firepower regardless of the conditions of weather or visibility. Another special advantage, especially in view of an enemy's own destructive capabilities, is their mobility, which includes their carefully built-in ability to operate in the field, without elaborate installations or launching sites.

These characteristics permit us to apply an important principle of war—the principle of economy of force. They do so because their precision enables us to achieve destructiveness exactly appropriate to the need—that is, to employ firepower with discrimination—and because their mobility enables one unit to do the job of several.

The dual capabilities of a modern army

In connection with the basic requirement for versatility, I want to emphasize that a modern Army requires the capability to fight successfully in either nuclear or non-nuclear conflict. This does not mean, in any sense, that the Army conceives of its role in modern war as being an unimaginative repetition of the methods of the past. What it does mean is that a modern Army must have a fully adequate nuclear capability to meet and defeat an enemy with nuclear weapons. At the same time, however, a modern Army's non-nuclear capability must be great enough that it need not feel compelled to use nuclear weapons as the only alternative to failure.

The second essential characteristic of a modern Army which I mentioned as deriving from modern weapons and equipment was mobility. I have already suggested the value of mobility both for protection of our installations and for multiplying our effective capabilities. Beyond that, modern developments in this area represent some of the most important advances and most striking potentials in the entire military field.

Mobility, of course, has both strategic and tactical aspects. I shall make further reference to strategic mobility in connection with a modern Army's requirements for flexibility. With respect to tactical mobility, however, I want to make particular mention of the various types of aircraft, both in being and experimental, which make up Army Aviation. What these and other developments in mobility mean is that we are on the verge of a situation which is drastically new. Throughout history, a major limitation on the freedom of action of land forces—and, consequently, on their effectiveness—has been the barrier of terrain. We can now foresee a time when mountains and rivers and other terrain features will cease to be obstacles or limitations. They will be meaningful chiefly as advantages to be exploited as the situation indicates.

The third area I mentioned in which hardware plays a particular part is communications. The great tactical dispersion to be expected in modern battle, due to increased ranges and effectiveness of firepower and to increased mobility, greatly magnifies the requirement for efficient, reliable, extensive communications. Closely related is the need to locate targets at distances that permit us to exploit to the full the added range capabilities of our weapons.

Also related to the whole field of weapons and equipment, another requirement which is underscored by the complexity of modern equipment and the dispersion of modern battle is adequate logistical support. The problems of providing that support under such conditions are numerous and difficult. Nevertheless, for an Army to be modern, the specialized requirements of matériel and personnel must be met, the extended distances from the supplier to the users must be traversed, and the added vulnerability of supply complexes in this day of nuclear weapons must be overcome.

A modern army must stay modern

Before I leave the subject of weapons and equipment, I want to stress that an essential requirement for a modern Army is a program through which it can stay modern. That is to say, a program of research and development which continually explores new avenues of possibility. In this connection, I want to say a word or two about the importance to land warfare of our growing knowledge of space. Its exploration offers prospects of great benefits in fields of immediate concern to the Army. To illustrate, I need only mention the improvements which will become possible in communications, in geodesy, in meteorological research, in early warning, and in obtaining data which will facilitate our development of effective defenses against long-range missile attacks.

After modern matériel, a second major requirement for a modern Army is a tactical doctrine which fully exploits the capabilities of advanced weapons and equipment. Because technology is continually increasing these capabilities, doctrine must be constantly re-examined and revised as necessary. Exploitation of new resources brings increased effectiveness, but often raises new questions as well. The need to find answers emphasizes the importance of imagination, open-mindedness, and originality, as well as thorough technical knowledge, about which I shall have more to say later.

Closely allied is the requirement for organization so designed as to make the employment of our modern tactical doctrine feasible.

Beyond the need for realistically modern tactical organization, there is a need for realistically modern organizational concepts for the over-all employment of military forces, of which Army forces are an integral part. I have already referred to the fact that modern military operations involve the combined energies and resources of all services and allies, working as a team. Vital to the achievement of integration of our total military effort is the concept of the Joint Chiefs of Staff, as now organized. Since the recent reorganization of the Department of Defense, the JCS have exercised direct authority over the Unified Commands. These, of course, are the instruments through which integration of our military effort is now sought within any particular functional environment. To my mind, there is a particular advantage in the fact that each member of the JCS is the uniformed chief of his own Service. With this composition, the JCS as a body can act not only more authoritatively but also more realistically than if it consisted of officers removed from direct connection with their respective Services.

Another major organizational requirement of a modern Army is flexibility, which must be provided in several different ways.

One of these is that a modern Army must be able to respond promptly and vigorously to threats in areas other than those in which Army forces are already deployed. To an important degree, the function of providing this capability rests upon the Strategic Army Corps, which stands ready to move, at a moment's notice, to any area of the world where it may be needed. The employment of this force, of course, depends upon the availability of transport. In this and in providing sustained administrative and logistical support to overseas forces, strategic mobility provided by the other responsible Services plays an important role in making an Army truly modern.

The modernization of the reserve components of an army

The other major element of Army flexibility through organization which I want to mention is the modern Army's requirement for reserve components. These must be able to fill promptly any gap in active military strength resulting from a commitment of strategic reserves, and to expand Army strength to the degree necessary for sustained, general operations. This ability lends not only flexibility but also staying power to Army operations. The reserve components occupy a prominent and indispensable place in any assessment of a modern Army's effectiveness.

In order to discharge these vital functions, it is clear that reserve component units need to be so equipped, trained, and organized that, with minimum additional training, they can promptly take their places beside the units of the active Army. In brief, the reserve components of a modern Army must also be modern.

The historically great value of our Army reserve components has been enhanced by a year of truly remarkable achievement. I want to make special mention of the advances which have taken place in the level of training throughout the reserve components units, and of the successful reorganization of the units themselves.

Today, over 90 per cent of the Ready Reservists, including National Guardsmen, have completed basic training. Almost a year ago, many of the reserve components organizations were able to eliminate basic training of individuals and concentrate exclusively on unit training. By the end of this year, all units of the Army Reserve and the Army National Guard will be engaged in unit training.

The achievement has been equally impressive with regard to conversion of reserve components divisions to the new organizational structure in effect for units of the active Army. This reorganization, which was begun in the field only last January, was scheduled to be completed over a two-year period. As a matter of fact, however, all but one of the 37 reserve components combat divisions had been reorganized prior to the annual field training this year. The remaining division will begin its reorganization next month.

Through these notable accomplishments, the reserve components have achieved the highest state of readiness they have ever known in the peacetime history of our Country. This is a striking tribute to the energy and devotion of their members. It is also a major and positive contribution to the strength and effectiveness of the modern concept of One Army, united in its effort to serve the Nation to its utmost.

In describing the requirements of a modern Army, I have discussed weapons and equipment, tactics, and organization. There is, of course, a major requirement which I have not yet mentioned. The compelling necessity both to achieve and to capitalize on the advances in technology emphasizes the continuing importance—no matter how marvelous our mechanical and electronic devices—of people. Weapons, equipment, tactics, and organization can achieve their full potentials only when combined with the required numbers of people operating with skill, efficiency, and devotion. Indeed, since the inevitable price of the new capabilities is increased complexity, this magnifies the requirement both for maintenance and for the level of skill necessary to perform it adequately.

A modern army's need for skill, judgment, imagination

The requirement for skill is clearly brought out when we compare new with old items of equipment. Consider, for example, cargo helicopters and trucks. Helicopters offer many obvious advantages. They are not road-bound. They are less hampered by terrain. They are considerably faster, due both to their speed and their ability to move across country. They can get easily into and out of places where trucks can go with difficulty, if at all.

In replacing transportation truck units by cargo helicopter units in the field army, the basis of substitution is 3 H-34 helicopter battalions for 4 transportation truck battalions, because of a comparable capability to transport a given number of troops over a given distance in a given amount of time.

However, trucks require one hour of maintenance for every 12 hours of operation. Helicopters, by contrast, require nine hours of maintenance for every hour of flight. For an equal time of operation, therefore, a helicopter requires more than 100 times as much maintenance as a truck. Thus, while the four truck battalions require only 108 maintenance personnel, the three helicopter battalions require a total of 800. Furthermore, to train a helicopter mechanic to an acceptable level of skill requires three times as long a time as to train an acceptable truck mechanic.

This same situation, in essence, prevails in all of our Armed Forces today.

As I have already mentioned, beyond the requirement of a modern Army for technical skill in its people, there is the necessity for judgment and imagination—for leadership. The leaders in a modern Army must have the initiative to take effective action in the widely dispersed conditions of modern battle. They must have the vision to see the extensive new capabilities of modern matériel as it becomes available. They must have the understanding to apply these

capabilities, alone and in combination, to achieve maximum effectiveness. With all this, there has been no reduction in the eternal requirements for courage, determination, and character which have always been so essential to successful leadership in war.

The Army owes an immeasurable debt to the scientist and the engineer. In the final analysis, however, it is the soldier—men like you veterans in this audience—who must weigh and balance the many factors involved, who must determine the military ends to be served, who must decide on the course of action to be followed, and who—with vigor, courage, and devotion—must pursue that course of action to its victorious conclusion.

In my remarks today I have emphasized my belief in the importance of land power as an indispensable and increasingly important element of our total military strength. I have pointed out, at the same time, that to realize the capabilities inherent in land power, the Army must be fully modern in its weapons, its equipment, its organization, its doctrine, and its outlook. Finally, I have listed major characteristics of a modern Army.

A modern army looks to the future

Our Army is modern in many vital respects. It is modern in its outlook and its thinking. It is modern in its knowledge, in its tactics, and in its organization. It is looking always to the future, and striving with all its energy to be ready for that future.

This is an effort which requires thought and devotion and persistence. It requires that concepts not only be envisioned but that they be promptly translated into existing reality. *The Army does not balk at the requirement, because it knows that no matter how perfect a blueprint may be, no blueprint by itself ever took a hill, won a battle, or fired a single round.*

The Army knows, too, that in the light of the existing threat, our national security, today and for the foreseeable future, requires a modern Army as an indispensable element of our Nation's military power.

That being the case, I believe that there is a single statement which expresses both a fitting conclusion to my remarks and an appropriate keynote for the conferences to follow. That statement is that the maintenance and achievement of an Army that is truly modern, in every respect, is the goal to which all of us must firmly and unceasingly dedicate ourselves. Only through such dedication can we contribute our utmost, as we are solemnly pledged to do, to the security and welfare of the United States.

MODERN ARMY

Ground Power and Diplomacy

ARMY

THE HONORABLE JOHN J. SPARKMAN

U. S. Senator from Alabama

Ground power is essential for two very basic reasons. It is essential if diplomacy should fail—a point that need not be labored.

But even more important, ground power is essential if diplomacy is to *succeed*. It is impossible to negotiate in a vacuum and the essence of diplomacy is negotiation. Unless a nation has means to protect its interests—means related in a realistic way to purposes of negotiation—it might as well not try to negotiate.

It is essential in my view that our military forces and military policies be tailored to promote United States diplomatic objectives. The aim of diplomacy is to make it possible for this nation to live in peace and freedom and to protect its vital interests. Essential ingredients of a successful diplomacy include national economic health, foreign assistance, overseas information programs, and national will and morale, to name a few. These ingredients must be artfully blended to produce a potent and effective foreign policy.

Given the challenge to the West from the Soviet Union, and the evident willingness of the latter to use force for the attainment of Communist goals, military power necessarily becomes a very important component of United States foreign policy. Too often, I think, decisions about the size and composition of our armed services are made without adequate consideration of our foreign policy objectives. *For example, it is scarcely a rational foreign policy objective to blast away all life from the Earth in order to counter a Soviet probing operation. And yet by neglecting ground power and concentrating only on means of massive destruction this is the box we are getting into.*

Frankly, I fear that this development is already sufficiently along that our ability to avoid a nuclear war should hostilities of any considerable size occur is practically nil. The terrible consequences of this possibility are frightening to consider.

Power must be related to realities. It would be meaningless to pass a law instructing policemen to shoot to kill whenever they observed a violation of law. What policeman would shoot a man for smoking on a public conveyance, or a child for jaywalking? The penalties of the law must have a reasonable relationship to the magnitude of the crime if law is to have meaning. In diplomacy, the power a state may ultimately use to buttress its foreign policy must have a reasonable relationship to the ends that are to be achieved.

Of course other factors, apparently primarily the budget in these times, also must be considered in moulding the military structure.

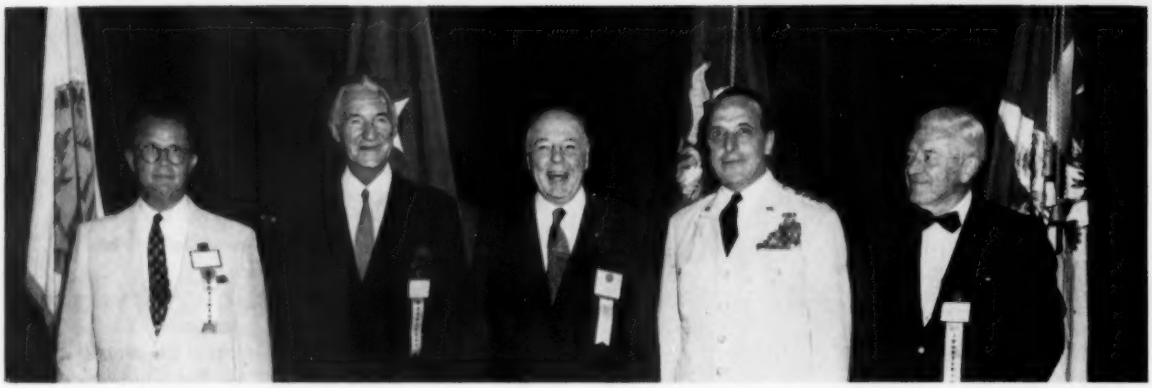
Frankly, I have been disturbed by the direction of our military doctrine in the last five years. While I do not claim expertise in the development of military hardware and its relationship to military doctrine, from my general observations it would appear that perhaps we are placing too much reliance on a strategic counter force ready to levy devastating retribution on an aggressor, while neglecting our ability to resist aggression on a limited scale. Let me make clear that I fully support the Strategic Air Command as a deterrent on the Soviet Union and that I favor the rapid development of missiles. I also realize that the development and production of rockets, modern aircraft, and nuclear weapons are extremely expensive. However, our gross national product is higher than it was in 1953 when we supported a more costly defense budget. In 1953 we spent over $50 billion on national security including military defense, stockpiling, atomic energy, and military assistance. In 1959 we spent only $46 billion, or $4 billion less.

If our best national interests require it, certainly we can maintain adequate forces to meet all nature of challenges. If we fail to do so, the penalty—including the possible loss of our freedom—we shall eventually have to pay will dwarf into insignificance the relatively small sacrifices required now to buttress our defenses.

The role of the President

I suppose part of our difficulty in relating military power to foreign policy need arises from the fact that our diplomats are not authorities on military policy, and our military men are not authorities on diplomacy—although sometimes I wonder if some of our officials are aware of this fact. As a consequence, we tend to compartmentalize our decisions. Thus, I am informed that the decision to provide nuclear weapons as a part of our NATO defense was a military decision, despite the tremendous foreign policy implications of that decision.

It is the job of the President, of course, to satisfy himself that military and diplomatic considerations are brought



The reception line that greeted members on the evening of 3 August (left to right): Lt. Gen. Walter L. Weible, Executive Vice President of AUSA; Maj. Gen. A. J. Drexel Biddle, President of AUSA; Secretary of the Army Wilber M. Brucker; Gen. L. L. Lemnitzer, Chief of Staff; Col. W. F. Rockwell, Chairman, Council of Trustees.

to bear on national policy. He has the National Security Council to help him. But despite this assistance, I have the feeling that too many decisions are avoided by the easy technique of settling for a watered-down compromise. Rather than presenting issues so the implications of decision may be clearly seen, it is easier to present issues in a fuzzed-up form that hides their central nature.

Impact of military doctrine on diplomacy

Let us examine for a moment the impact of current military doctrine on diplomacy.

In recent years our diplomats have developed policies described as "massive retaliation" or "brinksmanship." As I understand these concepts, we hope that by threatening all-out war we can deter a possible aggressor and inhibit him from undertaking actions which would be contrary to our interests. I am not sure that "brinksmanship" in the past was ever given a true test, although the late Secretary undoubtedly felt that the policy was successful. However, a knowledgeable bookmaker would have given considerably better odds for the success of such a policy several years back when the capability for a massive attack was a one-sided affair.

Today, when the Soviet Union can also threaten massive retaliation, U. S. brinksmanship has less appeal. In fact, in recent years there have been times when Khrushchev has given indications that he too knows how to play at brinksmanship. Mr. Khrushchev may well doubt that our response to challenge like subversion, the use of "volunteers," or even a situation like that in Hungary will be massive warfare.

We can expect that the Soviet leadership will attempt repeatedly to put us in positions where the stakes are low enough so that it will be difficult to justify "putting up," but where the stakes are high enough so that to "shut up" will exact a price in power and prestige. The Soviets, you can be sure, will see to it that the horns of this recurring dilemma will be honed to a sharp point. The fact that we are a leading member of a coalition of free and independent nations puts us at an even greater disadvantage in this game of Russian roulette. Our partners, whose futures are intimately tied to ours, may well hesitate to let us gamble for such high stakes. The Soviet leaders also have the advantage of managing a totalitarian society in which public opinon can be manipulated. In a democratic country like the United States where many and diverse currents of opinion can make their presence felt, given the absence of a clear-cut challenge of vital and easily perceived significance, an elected President might hesitate to take extreme action.

Furthermore, there is another danger, namely that the Kremlin might miscalculate the seriousness with which the American people would judge a particular action. The intensity and direction of the popular mood is not an easy matter to judge. However, the main point remains true: the elected officials in a democracy do not have as free a hand in this game as do the men in the Presidium.

There are many knowledgeable and well-qualified citizens who share my concern over the impact on our diplomatic position of our present military posture. The Committee on Foreign Relations has recently received a number of extremely thoughtful letters from a group of distinguished diplomats, now retired. Several of them commented on the disability caused our foreign policy by current military strategy. One commentator pointed out the connection between power and diplomacy and suggested that we may not have the material means to back us up in a successful negotiation of the complex matters which go by the collective name, "The Berlin Crisis." The writer suggested that "The policy in force since 1953 of cutting back on our conventional arms, now puts us in the paradoxical position of being disarmed by our arsenal of nuclear weapons —disarmed, because we cannot use them as a credible riposte to the sort of probing operations the Russians are conducting at Berlin. And since we are disarmed in a sense, by our nuclear straitjacket, our diplomacy lacks vigor. . . ." These are the views of an experienced foreign service officer.

Some military men have also expressed qualms about current policies. Recently General Maxwell Taylor said, "The size of the Soviet Army suggests to me that they anticipate

a great advantage in a period of mutual deterrence when both sides have about equal atomic strength. A conventional capability would be a great asset at the conference table."

Political control of the military

I turn now to the reverse side of the coin, the influence of military power on diplomacy, and discuss the necessity of maintaining political control over military strategy. Karl von Clausewitz, the famous German military theorist of the nineteenth century, provided the classic statement of the maxim that war should be fought with political objectives always in the forefront when he wrote: ". . . war is nothing but a continuation of political intercourse with an admixture of other means."

It is difficult for most of us to accept the idea that victory in war is not an end in itself, but only a means to a political objective. And yet in less than ten years we have seen Germany and Japan as allies rather than enemies. Today we encourage them to arm themselves when fifteen years ago we fought them.

Could the political aim of making them allies have been obtained by means other than war? Some military success may be necessary to accomplish the political objective, but the most effective military actions advised by military planners to overcome an enemy's force may not be compatible with the aims of national policy in the aftermath of the war. While the frustration felt by many over the Korean War may have been partially the result of the lack of well-defined and clearly enunciated policy objectives, in large measure the discontent resulted from an inability to adjust our thinking to the requisites of overriding political considerations as they were seen in Washington.

At the same time, it is obvious that in war there will have to be some compromise between military expediency and political objectives. And, as the experiences of World War I and World War II demonstrate, the more widespread and intense the conflict, the more necessary it may become

Flanked by Secretary Brucker, General Lemnitzer, Chief of Staff, greets an old comrade, Sgt. Maj. Ned Morrison, of Fort McClellan, Ala.

to subordinate political aims to military necessities if we are to achieve any worthwhile national objective at all or even avoid military defeat.

It follows then that the more limited the war, the more easily may military considerations be brought into alignment with political objectives. Thus it is in our interest politically as well as from a humanitarian standpoint to be able to fight small wars. If the United States and the Soviet Union ever become embroiled in a large-scale nuclear war, it may be impossible to pursue any rational national objective except survival. Such a war would in itself manifest a failure of diplomacy.

Aside from humanitarian considerations, which certainly are sufficient in themselves, there are other reasons for wishing to keep any conflict as limited as possible. The more restricted the hostilities, the better the opportunity to keep the various forces unleashed by war under control. History attests to the fact that the liberal democratic tradition suffers in strife and destruction, and uncontrollable revolutionary forces are often sparked by disorder.

We must, in our new role of world leadership, develop an awareness of the political nature of war. The Soviet leadership is historically more cognizant of the overriding political consequences of war than we are. We have seen the amazing spectacle of Stalin and Molotov, soon after the initial shock of the Nazi attack and during one of the blackest early periods of the war, already scheming over the postwar division of territory. Prime Minister Churchill was always aware that political considerations might dictate military tactics, and thus it was during World War II he advocated a strike at what he called the "soft underbelly" of Europe. It is my fervent hope that we can avoid war of any kind, because even small wars have the potentiality of developing into great wars. But our best chance of avoiding war is to be prepared to defend ourselves no matter what the course of the challenge.

The Chairman of the Committee on Foreign Relations a few weeks ago remarked that in political circles it is said that you cannot beat somebody with nobody. It is also true that we cannot protect ourselves from attack with nothing.

While I fully support efforts to reach satisfactory limitations on our armaments it is vital to our survival that we maintain military forces so balanced in composition that we can meet any threat we may face. Only with the backing of such forces can we anticipate that our diplomacy can be an instrument to avoid war and perhaps the annihilation of mankind.

This Is a **MODERN ARMY**

The Honorable WILBER M. BRUCKER

Secretary of the Army

The contribution which this Association is making throughout the country toward a better understanding of the importance of our Army to the national defense is unique and highly significant.

When we look back to the first annual meeting of this Association in October 1955, we can readily see that the progress of the Association of the United States Army has been nothing short of remarkable.

Moreover, the program we have witnessed during the last three days, together with the tremendously impressive military and industrial exhibits, illustrates just how important these meetings have become. They provide us with the best possible forum for disseminating information and for obtaining the views and ideas of some of the best minds in our country.

Before I go any further with my remarks this evening, I should like for us all to take another look at a man whom we have all seen around during the three days of this convention. He is called the soldier of 1965. [Sergeant Donald H. Knigge, 1st Battle Group, 10th Infantry, Combat Development Experimentation Center, came to the platform. His uniform and individual equipment were pointed out and briefly described by Mr. Brucker.]

You have seen this outfit many times during the last three days. Although this clothing and equipment are just about to become realities, I should like for us all to remember that there is a *man* inside of this paraphernalia—a man with a heart and a mind, a man who is alive and who loves life.

Never forget, that whatever the soldier may wear, with whatever weapons he may be armed, he is still the eternal man who goes into battle alone, and who holds in his two hands the security of the Nation.

Our Army today has a truly global mission. This Nation is associated with 45 other nations in the most powerful system of collective security ever created. Army personnel are serving in more than 70 foreign countries and areas. It can be truly said that the sun never sets on the United States Army. It stands shoulder-to-shoulder with the troops of our allied friends around the world as a potent reminder that we are ready to honor our international agreements promptly, and to oppose any aggression with the full force of American military might if need be. Nearly half the strength of our Army is stationed overseas.

The ties of responsibility and loyalty that bind the Army family together

This global mission imposes upon us a tremendous responsibility. It is a family responsibility—a task which the Army family must accomplish together. I am reminded at this point of the story they used to tell about the famous Fisher family in my home city of Detroit. At the time when the father, Fred Fisher, was about to go from the carriage business into the manufacture of automobile bodies, he asked his seven sons to stay with him. Each of the sons had separate plans for the future, but the father convinced them that if they stayed together and worked together as a family, they would reap great rewards. The sons complied with the father's wish and developed such a degree of unity and loyalty that it was often said of the Fisher brothers that whenever you nicked or cut one of them, all of them bled. This is the type of loyalty I should like to see developed in the Army—all the way around the world. I should like to see us grow so close together that any time some misfortune comes to the Army, we will all bleed, and any time something happens that is glorious and good, we will all have cause for rejoicing. Each and every part of our Army family must have an unswerving loyalty for the other.

In this audience are representatives of virtually every element in American life—active Army, reserve components, ROTC, business and industry, the scientific community, government, the press, and the civic leadership of the Nation. Each element has a vital and inescapable responsibility to make a dynamic effort to get the truth as we know it across to the American people, and to contribute in every way possible to the progress of the Army in its efforts to fulfill its global mission.

The progressive contributions to the on-going of the Army made by each of the technical services have been remarkable.

The Ordnance Corps is constantly engaged in the development and improvement of weapons, both atomic and nonatomic, which make the American soldier the best-armed soldier in the world. It is also responsible for the new combat vehicles which vastly enhance the mobility of his firepower.

The Transportation Corps is carrying on forward-looking programs for the development of advanced organic air vehicles. In addition to helicopters and light planes, its

Under Secretary Milton presents the case of the 49th round fired at Fort McHenry on 4 July 1959 honoring the 49th state. Capt. C. G. Beardslee, Fort Greely, Alaska (second from left), accepts for the Governor of Alaska. At left is MSgt. F. A. Lough, USARAL; at right is Capt. A. W. Nabors, Fort Meade, Md.

efforts are materializing "zero ground pressure" vehicles, such as the so-called "aerial jeep," which could replace some types of ground vehicles.

The Corps of Engineers is continuously developing new and better equipment and techniques for the construction of roads, bridges, air strips, water systems, and housing required by the Army wherever it may be called upon to fight. Aside from their military functions, the Engineers have made magnificent progress in civil works, including the United States' part of the recently completed St. Lawrence Seaway, the largest single-manager engineering project in the world.

The Quartermaster Corps' research and development programs are providing the American soldier with the combat clothing and personal equipment specifically designed to assure his maximum effectiveness and comfort under all conditions in any climate. It is also providing him in all circumstances with the most nutritious and palatable food which modern science and ingenuity can produce.

The Signal Corps has made tremendous forward strides in the development of lightweight, rugged, and outstandingly dependable electronic communications equipment, as well as the infrared, radar, television, and other systems for effective battlefield surveillance to the far reaches of modern weapons. It has also pioneered in the development of the intricate electronic equipment involved in the advancement of space science.

The Medical Corps is constantly exploring the entire field of medical science to enhance the soldier's health and increase his chances of survival in battle. Many of its contributions not only enhance the combat capability of the Army but also have a profound significance for the American people at large. For example, recent progress in the treatment of burns and the effect of nuclear radiation has been extremely encouraging.

The Chemical Corps is developing the means to protect our fighting men and equipment against the effects of chemical, radiological, and biological agents which might be used by an enemy. Its efforts also have far-reaching implications for every American in this age of peril.

The attitudes of mind and spirit that keep an army modern

The Army today has one attribute which ranks in importance far above any new weapon, item of equipment, or concept—and that is the new, restless, and revolutionary mental outlook among its officers and men—an outlook which is constantly searching for something better and always looking for something more suitable to the requirements of the age. After all, a modern army is one which is equipped to perform its functions in a modern world, and one which *stays* modern. In my opinion, the greatest single asset we have today is this *new attitude* and *habit of thinking*—and I have seen it everywhere. We are ready to cast away any outmoded ideas while seeking with a high degree of originality and imagination to stay ahead in an age when technological advancements occur with breathtaking speed. Implicit in this kind of thinking is the realization that we must not lose sight of today's task—that we must be ready at all times to fight with what we have, that we dare not let our present battlefield capabilities decline while dreaming up new ideas for the future.

That is the kind of thinking we have today. We have an Army that—first of all—is proud of its traditions and

its 145 campaign streamers. While the Army is capable of waging war today with the weapons now in its hands, it is constantly thinking of new ways to use the information that science and technology are giving it. *It is a proud army with its feet on the ground and its eyes on tomorrow.*

The educational opportunities offered by the Modern Army

We have today the finest officers and enlisted men in the Army—and by that I am including the National Guard and the Army Reserve—that we have ever had. The recent elimination of 72,000 ineffectives and the authority to reject substandard individuals prior to induction have contributed materially to the improvement of our enlisted personnel. Equally important is our success in retaining qualified and trained individuals in the Army. More adequate pay, prestige, and the opportunity for advancement are now provided, primarily by implementation of a comprehensive Enlisted Personnel Management Program, which includes educational development of interested and qualified soldiers, not only in our service schools but also in our units and civilian training institutions. Through the General Educational Development Program, over 45,000 enlisted men during FY 1959 achieved the equivalent of high school completion; 6000 passed the four-part college level test which is widely accepted as equivalent to a year in college. Sixty thousand were enrolled through Army Centers for study on a correspondence basis. College level enrollment alone totaled 50,000. In all levels of education, ranging from elementary instruction through advanced college work, a total of 360,000 individual courses were completed by 125,000 participants.

Similar programs for educational advancement are offered for our officers. Also, foreign linguistic skills are being developed. Outstanding officers are being considered for accelerated promotion. Ineffectives are being eliminated, and the "best qualified" method of selection is now in effect for promotion to all grades above captain.

In line with the events of recent years and the expectations for tomorrow, the curricula, facilities, and policies of our service schools have been greatly improved. Army schools and colleges will continue to emphasize instruction which trains leaders to cope with the drastic reduction in battlefield reaction and decision time resulting from the new tactics of nuclear warfare. Today's tactical doctrine imposes more responsibility on the junior commander than was borne by many senior commanders in World War II. Decisions which, in the past, might have waited upon a staff conference, in any future war will have to be made within minutes, and on the spot.

You have seen here in the various displays and exhibits some of the new weapons and matériel we are developing for the modern Army. To mention only a few, the Sergeant and the Pershing missiles to replace the Corporal and Redstone now deployed with our forces overseas. The Lacrosse became operational in July with the issuance of equipment to the two battalions which were activated in June. The Little John, successor to the Honest John, though not yet operational, is making excellent progress in development. The new Redeye shoulder-fired missile, which, in the hands of individual soldiers will greatly improve the low-altitude air defense of our combat forces, fills a need which has been felt since the beginning of World War II.

Do not think that we are being carried away by "glamour" weapons. On the contrary, we recognize that the ground soldier and the non-atomic weapons are still basic to the Army. We have just put into production the M14 rifle and the all-purpose M60 machine gun, equipped to fire the standard NATO cartridge. These will be made available to troops as rapidly as budegtary considerations permit.

Our new main battle tank, the M60, which will be produced during the coming year, is greatly improved over the present M48 series. The M60 will incorporate a 105mm gun and a diesel engine. It will defeat any existing tank, and will enjoy a widely increased operating range. We are starting production of a new armored personnel carrier and are developing a new command and reconnaissance vehicle. Both of these are highly maneuverable, flexible in use, air-transportable, and capable of swimming inland waters. Diesel-powered trucks, also capable of crossing inland waters, are being standardized. These vehicles will greatly increase the cross-country mobility of our combat forces and reduce the heavy requirements for ferrying and bridging equipment in river crossing operations.

Marshall G. Gardiner of Henry Leavenworth Chapter addresses the meeting after accepting AUSA's Chapter Scroll awarded his Chapter for "doing the best job in the past year."

Maxwell N. Brown, Mayor of Enterprise, Ala., speaks to the meeting after receiving the AUSA President's Gold Medal and Certificate for "his outstanding efforts in behalf of Borgardus S. Cairns Chapter, toward the formation of a regional organization in Southeast U. S., and in assisting in the formation of additional Chapters."

Organizational and tactical changes in the Modern Army

Our progressive, forward-looking Army has not concentrated solely on its men and weapons. It has conducted vast research and has developed a new military structure to employ both men and matériel effectively under conditions of either nuclear or conventional warfare. The first major change was the adoption of the Pentomic division in 1957, which has since been fully implemented. From it we have gained a great deal of experience. The first major improvements will be made shortly. The most significant of these is the increase in firepower brought about by reorganizing its artillery and providing an increase in the number of 155mm howitzers. Now, harder hitting and more versatile organizations are under study. These will take full advantage of our increased firepower and improved air and ground mobility.

Of equal importance to firepower is the commander's ability to locate and identify enemy targets quickly, so that he can use the new and powerful weapons which have been put in his hands. Combat surveillance equipment now or soon to be in the hands of troops includes short- and medium-range radar sets for detecting moving targets in fog, smoke, or darkness. Drones carrying infrared, photographic, and other sensory devices have been flight tested. These drones will soon be in production for distribution to combat troops. Aerial cameras using infrared and other special film, utilizing quick film-delivery and processing techniques, will be in the hands of troops during the coming year. This is all *solid achievement.*

The combat-readiness of today's Modern Army

Although some of the developments you are seeing at this meeting are not in quantity production as yet, I do not want to leave the impression that the combat readiness of the United States Army is dependent upon full issue of new weapons and matériel to every last troop unit. I must emphasize, what while the full production of this equipment will materially enhance our capabilities, our forces are combat-ready today. They are prepared for any type of aggression the communists might initiate. The ability of our Army units to move on short notice to defend any part of the globe was amply demonstrated during the Lebanon crisis. In particular, the formation of STRAC—the Army's Strategic Army Corps—has added immensely to our Nation's deterrent capability. This ready force, poised to move out by plane or ship at an hour's notice if necessary to cope with communist armed aggression anywhere in the world, is an indispensable element of our military strength in a period of tension. A year ago, you will remember, a large STRAC combat element from the 101st Airborne Division was deployed a distance of 1,740 miles overseas in only 16 hours and 40 minutes from first alert to final landing.

If the United States keeps its own long-range nuclear attack forces protected, out of reach, continually modernized and at adequate strength—as we must do—we may be able to deter the Soviet Union from using their ICBM missiles against the United States. But in the era of this "balance of terror" the United States' ability for massive retaliation must be accompanied by the balanced ability to deter limited war—piecemeal aggression which, if not prevented, could ultimately leave the United States an island in a hostile world, which would be almost akin to another type of "Fortress America." The final decision may rest upon the basis of our military capabilities for limited war. Hence, land forces have become increasingly important.

There is no substitute for men in a Modern Army

These are plain ideas, yet sometimes difficult to have accepted. When faced with any job, it is characteristic that our people try to find some way to do the entire job with machines. The modern equipment on display at this meeting demonstrates the Army's use of machines to help do the job. But the Army knows that there is no substitute for the heart, the nerve, the muscle, and the brain of men. Similarly, in the tough competition of power politics, while all forms of military power are essential, there can be no substitute for adequate land power, as the United States has learned time and time again. The inexorable logic of our times makes the Army more important today than it was yesterday.

The United States Army contributes very greatly to the Nation's air defense. In the development of weapons systems for air defense, we have recognized from the outset the changing nature of the threat and have had weapons sys-

tems operationally ready in time to meet the threat. As you know, the original Nike Ajax was put in operation in 1953, and can destroy any enemy bomber existing today. Hercules, the second generation of the Nike family, became operational in 1958. It can destroy even more advanced enemy bombers and also destroy cruise-type missiles. Its actual presence—on site—here and now—in the air defense of the Nation at this critical juncture makes it a major factor in our Nation's security. The third generation of the Nike family, the Nike Zeus, is the only United States guided missile under development to counter the intercontinental ballistic missile threat. Like its now proved predecessors, Nike Zeus has reached a high state of development, and in all phases of its development it is proceeding on schedule, reflecting the Army's stated confidence in the feasibility of providing an effective anti-ballistic missile defense. At present we are convinced that because of the difficulty, if not the impossibility, of destroying enemy ballistic missiles prior to launching, the Nation must have a capability for anti-missile defense of vital areas. We are firmly convinced that the Nike Zeus system can be placed in the field to provide this defense.

A Modern Army cannot let down its guard

We have considerable evidence in the reception recently accorded Vice President Nixon by the people of Poland and even the Soviet Union itself, that the man-on-the-street behind the Iron Curtain does not share the belligerence of the communist leadership toward America. We may hope that the success of the Vice President's mission, which he carried out with such outstanding success, is an indication that a day of better understanding between the Free World and the communist world will dawn in our time. However—and I say this with all gravity—no amount of optimism on this score should lead us into the folly of letting down our formidable guard in any respect.

During the course of this inspiring annual meeting, you have seen a great many outstanding displays, heard expert discussion of the Army's problems and progress, and acquired countless items of information.

What you have gotten here should not be taken home and put in cold storage. It should not be stacked in a closet with your suitcases after you get home.

Spread the message everywhere and to everyone you meet. Be an active, full-time and enthusiastic advocate of the Army—a *super salesman*. It is appalling the lack of information on the United States Army which one finds throughout the country. It is true that the people are fairly well informed on some of the more "glamorous" developments which have taken place, but they have no idea of how big and great the Army really is. They know little of its capabilities or its limitations or its problems. This is where you can do the greatest good. As the nation's need for us grows, the public's understanding of our mission must increase so that every citizen can appreciate more and more the grave and numerous problems involved in maintaining an adequate defense. This is your opportunity "for telling the Army story," and for helping us get the support we need to build a defensive force of the highest possible qualities. The Army is right up to the military crest of the hill. It has been a terrific job getting this far, but our task now is to put the Army "over the top." If we can get public understanding—if the public knows and understands the truth—the success of our task will be assured.

There is a rising tide of public opinion recognizing the need for ground forces. Give every ounce of added impetus you can to this tide.

You have accomplished great things during the past four years, growing from nothing to 110 chapters and several ROTC companies. You have a membership of 58,000. But let us not stop at that. Let us double the number of chapters next year and bring the membership up to 100,000. While you are doing this, you will make more and closer contacts with the people. You will be well rewarded for your efforts by seeing the new light of understanding that comes to their faces when they have heard from you the full Army story.

My friends, you have been very kind and gracious, and on behalf of the United States Army, whose humble representative I am, I want to say that no thanks would ever be enough for the enthusiasm and the effort that you have put into this convention and into your activities of the past year to help make the Army modern, keep it modern, and to hold ourselves ever ready for the day when something may occur. We fervently hope that war shall never come, but if it does, may the United States Army be the same as it has alway been in past decades—the first friend of Uncle Sam.

Gen. J. Lawton Collins (left), USA, Ret., former Chief of Staff is greeted by his old boss, Secretary Brucker, while his successor, General Lemnitzer, looks on during the reception.

The Meaning of One MODERN ARMY

GENERAL BRUCE C. CLARKE

Commanding General, Continental Army Command

In battle there has never been anything but "One Army". No victory in American military history has ever been won by a single arm, service or component of the Army. Victory in the field has always been the product of the combined efforts of Regulars, Guardsmen, Reservists and Army civilians with all arms and services working as a combined arms team.

Ever since the French and Indian wars, the wars in which America has been engaged have been fought primarily by civilian soldiers—the volunteers or draftees who were "in for the duration". Even today, a sizeable proportion of our Active Army is made up of the non-career soldiers who will return shortly to civilian life. It is, then, these "short timers" together with the Regular Army, the National Guard and the Army Reserve who make up our "One Modern Army".

To attain combat readiness we must weld these components together. The One Army concept must pervade all ranks. The ground soldier is not a Guardsman, nor a Regular, nor a Reservist nor a Selectee. He is simply the American fighting man on the One Army Team.

We must maintain a unity of purpose toward the common goal of preparedness. Within our Modern Army there is no place for parochialism, jealousy or friction. Defeat of our potential enemies requires the combined efforts of all branches and all components working together as a team. Every component, every arm and service, every element of civilian support—both within the Army and in industry—has a vital role to play before victory is attained.

That teamwork so necessary for victory has reached the highest point in peacetime history. There is yet more to be done.

The One Army Concept will not be fully attained until:

Our Army is a force represented by the concentrated efforts of the Regular Army, the National Guard and the Army Reserve.

Every member of that force considers himself as a member of that team.

Every member is trained and ready to fill his role, and

The Army is truly united in the eyes of the public as one cohesive whole.

Why do we need One Modern Army?

The need for mutual comradeship, understanding and cooperation has never been greater. The announced intention of our potential enemies is world conquest. Their military capabilities for carrying out this intention are the strongest of any aggressor in history. Modern technology has sliced wafer thin our protective cushion of time and space. No longer do broad oceans and powerful allies grant us years to mobilize and train our forces. No longer do we have months to activate units and perfect teamwork within the Army after war begins. No longer do we have time to erase conflicting attitudes and complete the welding process before commitment to battle.

Selected divisions and supporting units of the National Guard and U.S. Army Reserve are earmarked and must be trained and ready for mobilization immediately following M-Day. These forces are essential:

To replace without delay those Active Army forces moved abroad at the outset of hostilities.

To provide additional divisions—beyond those of the Active Army.

To fulfill our NATO commitments.

To man our air defense forces.

To enlarge our training establishments.

These units and individuals must maintain a high state of combat readiness. Combat knows no distinction whatsoever between combat ready units or individuals of the Active Army, the National Guard or the Army Reserve. Granted there is a difference in the degree of combat readiness appropriate to a Reserve unit and an Active Army unit. But never has the difference been so small!

From the very outset of a shooting war—general or localized—all components and all arms and services will be involved. The unity of spirit and teamwork in performance so essential to combat readiness must exist throughout the Army before the first shot is fired. Today our Reserve Components are an integral part of our deterrent.

How can we attain the goal of One Modern Army?

The first step in the attainment of such a goal is to insure that the concept of One Modern Army pervades all ranks. There must be a realization on the part of each component of the vital role they and their teammates play in national security. There must be a profound respect by each component for their comrades in arms.

Our public information program must be based on the One Modern Army concept. The public must be informed

The Secretary of the Army addresses the ROTC luncheon held at the Army and Navy Club on 3 August 1959.

of the vital role that reserve components play in national security. They must realize that the Army is not a sect apart, but that the Army is truly a service of the people, provided by the people, and for the defense of the people. In the eyes of the public all Army personnel, regardless of component, must be considered as soldiers of the One Modern Army.

The need for all components to work and fight together

The second step in attainment of the One Modern Army goal is to increase the combat readiness of all our reserve components forces. Each unit must be maintained at its maximum authorized peacetime strength with trained personnel. The Army reserves must maintain a pool of trained individuals prepared to fill rapidly the vacancies in strategic forces and the training establishment. Each unit must maintain the plans and the ability to absorb these fillers and mold them into full strength units with minimum delay. All commanders must be prepared to operate full strength units. Commanders, staffs and troops must be trained on modern equipment and in current concepts of operation. We must advance the tactical training of all components through the unit training phase.

The third step is to *maintain* this close mutual relationship between components of the Army. To achieve the required degree of combat readiness the same training and the same principles for guiding training must be applied to all. In addition, all components must be trained on the same types of equipment.

There must be an increased participation by all components in Active Army exercises and maneuvers. We must learn to work together and fight as a team.

More use must be made of the Active Army service schools and training courses by the reserve components. Conversely, such schools and training courses must consider the requirements of the reserve components when preparing the scope and establishing the course lengths. Appropriate courses for commanders and staffs should be attended jointly by all components. Commanders who are going to fight together must know and respect each other's capabilities.

There must be more participation by reserve components in studies on reorganization and equipment, development, and research. Conversely, the special problems of the reserve components must be thoroughly considered in such actions.

Finally, we should standardize, to the maximum extent practicable, our administrative procedures. We should strive for uniform and standard forms, reports and evaluations.

These are difficult tasks.

I consider that we have made great progress toward attaining One Modern Army. The troop list of our National Guard and Army Reserve units has recently been revised to fill more adequately the force requirements for future combat. This was a major step in the right direction. These units are now being reorganized under the latest Tables of Organization and Equipment.

The RFA program whereby the Active Army is training reserve personnel for six months and returning them to their units is another big step. The Active Army trained some 80,000 such personnel in FY 59.

Reserve components personnel and units are taking an increasingly active part in Active Army exercises, CPXs, training and school courses.

Reserve components units have reached the highest peak of combat readiness in peacetime history!

The need for additional facilities and modern equipment

But we still have a long way to go! The Association of the U. S. Army and its individual members can assist in attaining this One Modern Army. Congress must be made aware of the urgent requirement to provide all components with up-to-date facilities and equipment. Additional armories and weekend training sites must be provided. Units must be provided with modern and serviceable equipment to the extent that they can maintain it efficiently. We need the *green light* and the *green cash*.

We must impress upon the civic leaders and officials of every city and town the responsibility they have to support their local reserve components units. Localities must take

pride in these units. The units must be made attractive for the higher type of youths of the communities. The public must realize the vital part these units play in national security. They must be impressed that *survival later* depends upon *preparedness now*.

I would like to quote from Major George Fielding Eliot: "The illusion that hardware is everything and the soldier is a relic of Valley Forge and Gettysburg can destroy our country. No crystal ball . . . can tell us where, when, how big or how long lasting will be the next emergency our Army will have to meet. *Of two things we may be sure—we will need ground combat soldiers and we must train them beforehand.*"

We must impress upon all members and components of the Army the serious nature of the duty they perform.

We must maintain high standards of efficiency in training and operation throughout all components of the Army. We must continually raise our standards, our educational level, and our technical proficiency.

We must weld all components of the Army together by mutual understanding and mutual respect. We must learn

to work together so that all branches and all components of the Army are a balanced, cohesive entity whose continuing element is teamwork and whose ultimate objective is victory.

In short, our purpose is to approach unity and combat readiness of all components with the urgency appropriate to the gravity of the international situation. Our goal is to move all units faster towards combat readiness until all our components have become One Modern Army—combat ready!

Taking the review at the special retreat ceremony held at Fort Myer on 2 August: Maj. Gen. A. J. Drexel Biddle, AUSA's President; Hon. Hugh M. Milton, III, Under Secretary of the Army: Gen. Jacob L. Devers; Gen. John E. Hull; Lt. Gen. Milton G. Baker; Lt. Gen. Walter L. Weible, AUSA's Executive Vice President; Lt. Gen. James F. Collins, DCSPER, representing the Chief of Staff; Col. Mark F. Brennan, Chief of Staff, MDW.

PANEL DISCUSSION

How We Man a MODERN ARMY

MODERATOR

Lt. Gen. LEWIS B. HERSHEY
Director, Selective Service

PANEL

Brig. Gen. S. L. A. MARSHALL
Military Writer, The Detroit News

Dr. MEREDITH P. CRAWFORD
Director, Human Resources Research Organization, The George Washington University

Dr. ELI GINZBERG
Graduate School of Business, Columbia University

Sgt. Maj. JACK A. JORDAN
Sergeant Major, 82d Airborne Division Artillery

Because of space limitations it was necessary to condense this discussion.

We are going to talk about how to man the Army. I shouldn't make a speech myself, and I will not. We have tried to divide the subject into three parts: How do you get men? How do you train them? How do you keep them? Who has the first question?

QUESTION: I would like to ask why we have to use Selective Service to get guys into the Army when the other services don't have to use it.

DR. GINZBERG: I don't think it is right to say you don't use Selective Service for the Air Force and the Navy. They couldn't get their manpower, as far as I am concerned, in the numbers they need without Selective Service. So I think the question is somewhat out of turn.

GEN. MARSHALL: I agree absolutely with Doctor Ginzberg's comment. It is the pressure that Selective Service generates that enables the Marine Corps to keep filled. I think this is true of every other Service.

QUESTION: This is a loaded question. Why have recruiting at all? Why not let Selective Service do it all?

GEN. HERSHEY: Sergeant Major Jordan, you get some of these problems.

SGT. JORDAN: I think one great value of recruiting is that you get a higher type of individual, when you point out the fine points of the Army, in the way of things like education, training and so on. I think you get a higher type individual by recruiting than through Selective Service.

DR. CRAWFORD: The first important thing about recruiting is you get a man who in general wants to be in the Army, so you start with good motivation. Whether this motivation moves over to the inductee is another question. But if you can start with somebody who wants to do the job, you are way ahead.

DR. GINZBERG: We have a tough problem on our hands at this time; because my estimates—and they are not private estimates—would indicate that of the 18-year-olds now coming of age, only about 30 per cent will ever see any form of service under the present force levels and reserve obligations. I think that is an intolerable position. Under the present system there is just no possible equity.

GEN. HERSHEY: I am not going to let Dr. Ginzberg get off the hook, especially about that. If you plot the curve of rejections, you will find in the next ten years we are going to be out of men rather than over, if the curve of rejections continues to rise.

DR. GINZBERG: The Army, Navy and Air Force can change the selection criteria as much as they like. But I suspect they have moved them up because they are loaded with manpower. But if they get caught, they will lower the criteria. So I don't think they will be out of manpower.

QUESTION: If you draft people, you draft everyone. Therefore you draft the men who would have otherwise volunteered, so the quality remains the same. If you raise the standards to reduce the input, you also raise the standards of the military service. Therefore, I see no problem.

DR. GINZBERG: How many people do you want to take in? Let's agree for the moment now that we are going to draft everybody. I want to know how many people are going to be covered by the "everybody," because as I see the figures for the 1960s, at present force levels, and with two to four years of service, we are not going to use more than one out of three.

GEN. MARSHALL: You start with the proposition that you can have military service on the basis of equity and this is a deception. You can't possibly equate military service. It has been one of the great illusions of free nations that you can manufacture a military policy that would bring about an even distribution of the load. I say it simply can't be done. There is no equating the experiences, for example, of one brother who goes into service as a volunteer, gets two months' training and is shipped overseas and is shot dead in his first battle with another brother who goes into service concealing a disability he has and three months later the Army discovers that disability and he is routed out; he is then put on compensation, he is a returned veteran and

the next thing you know he is running for Congress on the basis of his record. . . . [Applause]

Dr. Ginzberg: I would say if you don't try for equity, you are going to be in a worse soup than now. I would say you can reject 20 or 30 or 40 per cent, but you can't get away with rejecting 66 per cent.

Gen. Hershey: At the present time we are well above 50, and going up. I wonder if a democracy is any better off when it uses social pressures to get the fellow in who recognizes his obligation and lets the fellow stay out who doesn't and then we very smugly call it democracy.

Question: In absolute reverse to the present discussion, what we seem to be faced with quite often is why does it take so long, so much red tape and expense, to get rid of the unfits we have already drafted?

Dr. Crawford: I cannot answer that question. I am concerned more with training of them while they are in. I will make this comment: that is is sometimes not as easy as it sounds, to determine accurately how fit a man and to get a definitive judgment as to whether he has altogether lost his usefulness.

Gen. Hershey: I would like to ask you a question, Dr. Crawford, because in our business we worry a great deal about this man who comes in all hooked together, his legs are fastened onto him, his arms and head—sometimes his head is flat, sometimes his feet. This man comes in and about 15 specialists grab their chunk and run off and look at it and one comes back and says, "The chunk I have is no good." We have had a feeling that this fellow has never been measured functionally. Maybe you say that isn't in your area, but it seems to me the scientists have to tell us how we can measure a man on what he can do, rather than what he is in a pot-luck look by several associating scientists who sometimes don't associate very closely.

Dr. Crawford: That is a big question. As you know, in the Army we have a good many kinds of selection and aptitude tests which make a reasonable prediction of how well a man will learn to do a particular kind of job. It is by no means a perfect prediction and if we have an opportunity, after the man has tried one thing, to move him to something else, we could increase the value of that prediction a great deal. It is true that most tests determine a particular ability of an individual, and it takes a whole battery and people are combined in all sorts of ways; some have abilities in one thing and some in another, but not the same man combines the same way.

Dr. Ginzberg: In general I would say that it depends upon what your assumption is. I am a simple-minded fellow who simply assumes that anybody who shows up for the Army ought to be able to do some kind of a job in the Army if he has been doing a job in civilian life and not gotten into too much trouble. That ought to be the presumption. All the evidence ought to be that a human being, brought up in the United States, who has gone to school and stayed out of trouble with the police, has gotten a job, ought to be able to do all right.

The second point is this: if you are dealing with youngsters who have had a certain amount of delinquency in their records, but only a mild amount, I think the presumption is they are going to straighten out. Most people do. The prison population looks large, but really it is very small.

I think it is a matter of how you look at this. If the Army is to be a post graduate school to train Ph.Ds only, then you have a new problem. I don't think that is sensible. I think while it is true that the armed services need a reasonable number of people who are quick learners and able to cope with some of the intricacies of mathematics and the like, by and large the Army must reflect society. I start with the assumption that most people in a big Army ought to be able to do a pretty decent job unless you have gotten way down to the bottom.

Sgt. Jordan: I don't think the aptitude test is always indicative of the man's ability to do a certain job. I have several acquaintances who have had no formal education whatsoever, but you couldn't find better men when it comes to common sense and being a good platoon sergeant or chief of a section.

Question: This is a subject in my field. The question which was originally propounded from the floor related to the slowness of the administrative machinery for discharging and ridding ourselves of the so-called incompetents, or marginal personnel.

The presumption that it is a slow-moving machinery is incorrect. The slowness is in the preparation or decision by the lowest echelon, usually the unit commander, that the man is in fact marginal in effectiveness. There is no one, really, who can determine on paper whether a man is effective or not. The man who can determine this is a unit commander, his noncommissioned officers and officers. He has the means to rid us of these people. If he doesn't use those means, he can blame only himself.

Gen. Marshall: My feeling is that we are doing too much screening and it is too broad and we are getting men out of the Army who are thoroughly good fighter types, people we need in combat.

I have said this repeatedly during the last two years: that the more I see of the screening method, the more I am convinced we are going too much toward the idea that unless a man has some real specialty and is extraordinarily good at it, he has no place in the Army. But there is such a thing as a natural fighter type, a guy who can carry the ball for you when you get into trouble. A good many of these men are down around 90, 95, maybe some 80, in the IQ

bracket. The thing that impressed me, both in Korea and in World War II was that among all the individuals that I knew in company after company, almost invariably the emergent leader type was an individual who, from the standpoint of intellect, would be right at the marginal level now. He probably would be flunked out of the Army. And yet these men are extraordinarily good and we need them in combat companies.

Now I have been with infantry companies within recent months where men were compaining about this one thing: they were losing men out of the company that they knew were good battle soldiers.

QUESTION: Is there any reason why we can't cut down the length of the period of selection and depend on a strong recruiting force to recruit from those selectees a permanent Regular Army force?

DR. CRAWFORD: I question numbers at this point. Do we have any data to show we could get enough purely by volunteering? My guess is we couldn't fill our current quotas with a purely volunteer system.

DR. GINZBERG: At the present time the advantages of staying out appear to the bulk of the Americans who have been pretty well educated, so much better than the advantages of going in, that I don't think you can get all the people you need.

Gen. Hershey

Gen. Marshall

Dr. Ginzberg

Dr. Crawford

Sgt. Maj. Jordan

GEN. MARSHALL: I agree completely with these statements. I think the professional Army, the hard core professional Army, is an illusion. We are not going to get it. In times of prosperity the competition without is too great and in times of depression, the Congress won't support that kind of an Army.

QUESTION: Why isn't it possible, with the preponderance of people of which only about one third can serve, that we can't be more selective in those we take to fill the jobs that need to be done rather than just take people and then find out what they can do after you have them?

DR. GINZBERG: How are you going to select them? If you take all the bright people, in terms of IQ, the one thing you can be sure of is that they don't want to stay with you, by and large. On the whole, if you have people intellectually inclined rather than physically concerned with an outdoor life, the armed services is not necessarily the place that makes the most sense. I would ask, what are you selecting for? What you want is a reasonable cut of the population, and I don't think cutting them on IQ or complete physical perfection, makes too much sense. You want to get those people who will find the Army a good place for themselves, who will give staying in the Army. That is a hard thing to select for in the Army a good day's work and who are interested in terms of any of these paper-and-pencil systems.

GEN. MARSHALL: I am wondering if generation after generation, we don't sell ourselves a lot of hokum. Here today, for instance, we continue to say that every guy in the Army has got to be a wizard, that war is so much more complicated we have to have top-level guys, we don't need strong backs any longer, we need the guy with brains and it is only the guy with brains that can do the job.

This simply is not true. It is the same kind of nonsense we listened to in World War II, when people said as the war came along that this is high-velocity warfare, it is nothing like World War I, we have to have a different type of individual. Believe me, if you were in both of them, the show looked just the same, and the strain was about the same. This is true of war after war. And yet we continue to kid ourselves that there is no longer a place for a guy that has a strong back and a willing heart. This is the kind of a bottom an Army needs. It has to have tough individuals who can work because there is a lot of hard labor in the Army. I simply don't buy the idea that we have only room for superior types.

DR. GINZBERG: I haven't understood why everybody who goes into the regular army must become a noncommissioned officer. I can understand why most of them should, but not everybody. There ought to be a place for a few of these people who are perfectly happy, let's say, to remain a corporal. I would say the notion that everybody who comes into this man's Army has to be of the quality to become a senior noncommissioned officer is a mistake.

QUESTION: I would like to ask one question in reference to training. Does the panel, with their experience, believe that sufficient emphasis is being placed on disciplinary train-

ing in consideration of current conditions, social conditions, in the United States, and the increased terror and panic that can be expected in nuclear warfare?

SGT. JORDAN: I believe that in the line of training, with reference to disciplinary training that you spoke of, I agree with you. I don't feel there is enough of this. I think that under present training policy we have too much repetitious training. I don't mean that a particular subject of training should not be repetitious, but I mean the equipment, the weapons we have to train with. Much of our equipment and weapons are antiquated pre-World War II or World War II weapons and probably some of our men are a little better than the weapons and equipment they serve.

GEN. MARSHALL: I feel in the United States we are making a fatal mistake with respect to the possibility of nuclear war. I do not feel that come nuclear war, civil defense would function whatsoever. I think we would have a breakdown on it and I think the job will fall into the lap of all components of the Army. If this proposition is true, then there is a different kind of training that we need in addition to the training we are getting.

GEN. HERSHEY: Aren't we up against the proposition of where the battlefield is going to be? If some of the things they tell us are true, we might not have to go too far to get to it.

GEN. MARSHALL: That is right; this might be the battlefield. With respect to the atomic battlefield, that is, a deployed field army, and I think we need to take a harder look at that question, because a good many of the things I think we are contemplating as being possible would not work at all. For instance, I am quite sure that the unit which is struck—let's say of battalion or even of regimental size—it would be ridiculous to think of using immediately even the fraction of that outfit that was still able-bodied. It would necessitate withdrawal and reorganization as promptly as possible.

DR. GINZBERG: I don't know anything about battlefields, but in terms of what you can do with men in the Army, I think the problem is also the backdrop of the country. I am impressed with the fact that the people who failed in Korea were not the soldiers but the American people; we ran a war in Korea in which *x* number of poor fellows happened to be picked to fight the war and the rest of the country went its own way. That is an intolerable situation. I am only surprised that more boys didn't break.

I would argue that until there is a national leadership that can convey very much more than the present national leadership has seemed able to do, or is interested in doing, the Army will be under severe limitations as to how far it can go towards really disciplined training.

QUESTION: I would like to submit an aspect to the panel. Is the Army not spending too much time in the training of our soldiers on what I like to call a gilding-the-lily type of training. Why don't we spend more time in training him how to shoot and how to maneuver—the more military aspects? Has it been the panel's observation, in its study

of this subject, that we are spending too much time on these marginal types of activities?

DR. CRAWFORD: There are two old Army phrases that are still very useful: need to know, and nice to know. It is not always easy to discover exactly what is the minimum need-to-know about a job. We have done extensive research in many jobs to pinpoint exactly the minimum need-to-know. It is true that in many Army training programs there have been more nice-to-know and less need-to-know. But research is showing us what those need-to-knows are. I think when we know that, we can spend all of the available training time—and we may not need as much—on training in those essential items of skill and information. I believe that we are making real progress in that direction.

GEN. MARSHALL: I believe training is not nearly hard enough and there is nowhere near enough nighttime training, not enough training in the field. I believe that we need to raise our sights 50 per cent.

DR. CRAWFORD: I think you are quite right, especially about night training. Night training is much easier to talk about, as you know, than actually to do.

SGT. JORDAN: I have one thing I would like to say on that. Some of the training subjects we do have, I think we could do without, such as TI&E and character guidance. On character guidance, I think that is up to each individual concerned how his character should be guided.

I will say—to get in a plug for the 82d Airborne Division—we get plenty of field training in how to shoot, how to move, and how to communicate, which I think is what we need more of.

GEN. MARSHALL: How much night training do you get?

SGT. JORDAN: Sir, we have in the 82d Airborne a full-cycle training program, in which three of our lettered batteries within a battle group, division artillery, are out all the time, night and day; they are out two nights, come in at noon the next day, and you have two more going out. So we stay in the field and get a lot of training.

GEN. HERSHEY: I was wondering if anybody on the panel had any feeling that we might get so good in our design of hardware that we would pass the place where there was more than one man in a million who could actually operate them?

DR. GINZBERG: During the Korean War a lot of new signal equipment used to stand idly by while the soldiers used

the old stuff because they didn't know how to cope with the new. I have never seen in the Pentagon the kind of dovetailing of plans as between the hardware and manpower that gives me much sense of assurance that we are not going to price ourselves out of the manpower market.

Dr. Crawford: If we consider the weapon as an extension of the man, which it certainly is, then I believe that we have fallen down to a large extent in designing weapons without realizing that the man who operates and maintains it is the key to it. As Doctor Ginzberg said, if you don't have a man who knows how to use it, the equipment is worse than useless. So I believe in our combat developments and design of equipment, we must begin with an idea of the range of capabilities of the men that we have and design the equipment around them.

Gen. Marshall: There is one additional point in connection with that. I have gotten the impression that one mistake we make is that we tend toward too much the theory we can develop the all-around weapons-handler. I think to that extent we have suffered, because there are certain weapons that require specialist training and we ignore that fact.

Dr. Crawford: I think we are on the horns of a dilemma to some extent there. We realize special training is required for accurate use of a good many weapons and yet in the manpower business there is pressure to reduce the number of specialties.

Gen. Hershey: We have talked some about how we get men and some on how we train them. Now let's see how well we do on the question of how we keep them. I think this includes, undoubtedly, all grades.

Dr. Ginzberg: How well do you want to do? That is what makes sense in terms of a goal. How *many* people do you want to keep and what *kind* of people do you want to keep in this kind of Army, in which you are interested in an increased mobilization base? Maybe you wish to retain some of the people you lost, but I ask you who it is that you are losing that you want to keep and who it is that you are keeping that you want to lose? You haven't really specified the question enough. I think this is true of industry too.

Sgt. Donald H. Knigge explains to General Biddle and General Lemnitzer the weapons and personal gear of the Soldier of the Future, developed by Combat Development Experimentation Center at Fort Ord

Question: Now it probably may be theoretical, so far as the Army is concerned, but in keeping skilled manpower, that seems to be the problem and it seems to me it is much harder to keep your enlisted men than it is to keep the officers.

Why do we have to have this enlisted-officer breakdown? Here is food for thought. Supposing we had a progressive method of promotion, whereby an enlisted man, were he capable of progression up through, say, master sergeant, then if he could meet certain qualifications he would be promoted into the officer ranks right on up? How about an opinion on that?

Sgt. Jordan: I feel that, speaking about your noncommissioned officers, or enlisted grades, there has to be a certain position for each man; in other words, your private is not automatically going to be the sergeant major of the battalion or regiment, and I think this works all the way up through the ranks. I do not want to comment with respect to the officers. I am speaking particularly of the enlisted men. I think the establishment of the new grade structure in the Army now, if carried through as proposed, will be one of the finest things that has ever come about in the career field. However, if we violate the principle of the structure, we will find the same stagnant situation we had when we had 2,000 or 3,000 master sergeants in a particular army area, on special duty and so forth. So I think that the establishment of the new grade structure is going to alleviate the situation you brought up.

Gen. Marshall: As I understand the question, you propose that a senior noncom, after a certain time in grade, be automatically commissioned, provided he satisfied a board who looked at him. In my judgment that would have a very salutary effect on the Army of the United States. I think it would be a wonderful thing.

Dr. Crawford: I would like to return to the comment Dr. Ginzberg made. I think he has a good perspective there. We are dealing, in the enlisted group, with a young age group. I don't have the exact figures, but I am satisfied that there is a tremendous job mobility in this country for young men to go to officer schools and become officers, I would an improvement over the other. But when we are attempting to set some sort of 30-year standard and be very unhappy with ourselves when people don't want to stay in for 30 years, we are probably being somewhat unrealistic in the light of the job mobility in the country as a whole.

Dr. Ginzberg: I would like to talk about this in two ways: I think the question from the floor dealt with the question of how high in rank could an enlisted man go. I would like to break that down into how much money can he earn and what kind of work can he do.

I think so long as you make it possible for some enlisted men to go to officer schools and become officers, I would

still keep the distinction as between enlisted personnel and officers, leaving a bridge so that some people can move. If, instead, they want to stay as enlisted men, and have the technical competence, I think it is important to pay them enough.

I would guess the real challenge to the Army is to try to break open a little more the question of technical responsibility for work and if you then do that, I think you have moved a fair distance. The notion that because he is an officer he knows more than anybody below him, doesn't make any sense.

An alternative approach and an important one, I think, is to get rid of people before they have served 20 years. The Army should give a person a pretty good opportunity for maybe 10 years and then vest some pension rights in him and then let him go. I think the last ten years of a man's 20 years of service is likely to be on the downgrade frequently and especially the last five years, because he is waiting to accumulate years of credit to get out. I think it is cheaper for the country to let a man move while he has still got something in him, when he feels he is blocked. If you feel you are blocked, you ought to be encouraged to move out. If you go in at 18, and spend 12 years in the Army, and if they give you a couple of thousand dollars, you still have a lot of career ahead of you.

GEN. MARSHALL: Isn't the whole trend in society against this thing? We have been listening to it for 25 years; security, security; don't take any risks, boys; stay where you are. And that is the way people think today and that is the way all the institutions within the nation think, and I don't see how that can be reversed in the Army.

The question he asked is still unanswered. I see no reason why it is impossible to commission from the ranks and why it would be bad policy in peacetime any more than in wartime.

GEN. HERSHEY: In order to sum the thing up, and I am afraid we must sum up now, I yield first to the Sergeant Major, who I believe comes nearer being in the area that we are talking about than any of the rest of us up here.

SGT. JORDAN: I just want to say in brief summary, that I think the Army's program we have had for the last two years is developing and bettering the situation. I am speaking primarily of the enlisted personnel; it is going to go a long way toward the betterment of the Army and the career of the noncommissioned officers and the private soldiers.

DR. CRAWFORD: I won't attempt to summarize what we have been talking about. I would like to point out that it is very important that the Association of the United States Army has devoted an afternoon to putting the problem of the modern army in this kind of perspective; that is, in terms of the men, the individual man, who has got to fight. We haven't talked about all the problems, but I think we have set the perspective.

GEN. MARSHALL: I would sum up this way: I think we have talked all around the problem. I think there are

still some things to be said. I put first on the list this: that the Army's manpower base is too weak today, it is too low, and I am talking not just about the standing establishment, I am talking about the reserve structure also. Until the time has come when we have enough, this is the number one objective and we shouldn't forget it.

The second thing is that I think we have got to work harder toward a clearer definition of what we imply when we talk about leadership: what it means, what is the character of good leadership within our tradition, and inside our Army establishments.

In reading Dr. Ginzberg's book about the lost divisions, I was impressed more and more about the signal failure of leadership with respect to these things. Why was it so many men were screened out of the Army when they didn't need to be screened out? It was because down at the lower levels there was weak leadership. Leadership that would not say, "I can take this man and by my own power I can lift him up and make him a strong glowing person." That is really what we need. It isn't so much a college education, but moral force.

The third thing is a technical matter. Let's look once again to our communications. We tend so much to look at the techniques and forget that basic communications is in the man, keeping him mobile, making him more articulate. This is the thing. If I had my way in basic training, before I ever gave a man a rifle to work with and before teaching him how to salute, I would start talking to him and say, "Look, you are in a game where you have got to give and give and give; you have to become a communicator; everything that comes to you, you have to be willing to talk out." Because in all of the periods of danger, the tendency of the man is to clam up, and that is where we go wrong.

The fourth point I reflect on more and more as I advance in years. It is this: I wonder why we go through a war and then almost immediately we begin to dissipate the most valid lessons of our combat experience, so that shortly we find that in our patrolling systems, in our reconnaissance work, in everything, the little things that we have found in battle that were so important have gone by the board. Leadership has forgotten these things.

I think that one of the explanations is that possibly we are becoming a little bit over-schooled. We feel the way to keep our officers fresh is to send them to one school after another, where they get the new doctrine. We are so afraid of looking as if we are old, and forgetting the basic, fundamental things that you have to have if you survive on the field of battle.

And I often wonder why it was we never considered this kind of thing; the only teaching that really convinces men who have never seen battle, comes from the individual who has been there and talks about the things he himself has seen and done. But do we ever tell our battalion commanders and company commanders or unit commanders who were in Korea, "When you get before your men, remember what you did at that time, get up at the blackboard and begin to talk to them about the things that happened to you and then they will believe?" Not at all. I think you have to conduct an Army in the spirit of a revival meeting. There is a great deal of evangelism in it. We are in a cold intellectual process and what we need is to be emotional about the things we truly believe in.

Dr. Ginzberg: I want to make my comments on three questions: What can the Army do; what can the nation do; and what had we better leave to God to do because neither the Army or the Nation can do it.

As to what the Army can do, underpinning General Marshall's last comments about something I think he stirred up much too much, there is the question of leadership; the problem of management of men is a problem that somehow or other is not reducible, in my opinion at least, to a bunch of techniques or a set of handbooks, and I don't know what has happened. Maybe nothing has happened. The leadership in the Army is probably better than it has ever been.

What we have been saying as a panel is to re-study the balances that are required as between the formal schooling and the formal educational achievements and the kinds of performances that are demonstrated only in real life, and if you don't look to performance to bring forth some of the leadership, you are really going to be in a bad way.

As far as the nation is concerned, from many points of view I think that is the major challenge to the Association of the United States Army. You can not run an Army effectively unless obviously you have understanding and support from the nation at large. We have, basically, a non-military—I won't say anti-military, but a non-military—tradition in this country. I suspect, as a layman on the outside, this is getting accentuated every day, with more and more emphasis on nuclear warfare, because this finally proves to the citizen at large, "What is the use?" The more horrible a war and its potential becomes, the more certain is the average citizen that you can't do anything about it. I think a question for next year for the Association of the United States Army is: How do you get across to the public at large and to its leadership a somewhat more realistic understanding of both the potentialities and limitations of the Army? The real implications of nuclear war, is one problem. But maybe there is a significant role for the Army short of nuclear warfare and we have to think about that more than we have.

For one, I stress the questions of equity, because I believe you can not run an army, you cannot attract the right kinds of Americans into the Army or retain them unless there is a backlog and understanding and support and prestige for the military mission in the public at large. I am worried about such matters of equity and morale, because I think unless you have the public with you, you cannot get the right representatives of that public into your organization.

I think we have to recognize that some of these problems, in terms of their real solution, really should be left with the Lord. That the best chance of the Army doing its work effectively is obviously if the war will never have to be fought, and that means really if the Russians begin to understand we have adequate power.

Maj. Gen. A. J. Drexel Biddle, President of AUSA, opens the Fifth Annual Meeting in Sheraton Hall

Gen. Hershey: I want to confine my remarks to three subjects. First, the question of how you get them in. We have to have from science I believe more than we now know on how you can functionally use the men. I agree with everything that has been said, that you can not have a strong nation if 25 or 30 per cent of them think they are carrying all the load.

In the second place, in the matter of training, I am obviously old-fashioned and antiquated. I believe that the unit has been deprived of far more training than it should have. In training, first you have to make a soldier. [*Applause.*]

I know that "devotion" and "dedication" are words that are probably over-used—but for my money, I don't care whether it is nuclear war or what, I would rather be around the guy that stayed, not knowing very much, than the guy who wasn't there, or who left with a lot of knowledge.

So I think we need to emphasize more the guy becoming what we used to call a soldier and then let's try to put the top on him.

The third thing I want to re-emphasize was what has been said on leadership. It is all very well to raise the pay and have industry raise it back a couple of times. I think we have down-graded the privilege of sacrificing for the United States, and I still believe we have got people who would react better if we offered something tough that few people could stand. But you have got to have leadership, and it can't be management. [*Applause.*]

PANEL DISCUSSION

AUSA
1959 Annual Meeting

How We Support a MODERN ARMY

MODERATOR

The Hon. COURTNEY JOHNSON
Assistant Secretary of the Army for Logistics

PANEL

Maj. Gen. E. C. ITSCHNER
Chief of Engineers, U. S. Army

Maj. Gen. DAVID W. TRAUB
Director, The Army Budget, Office of the Comptroller, Department of the Army

Dr. HERBERT E. STRINER
Operations Research Office, The Johns Hopkins University

Mr. J. E. TRAINER
Executive Vice President, Firestone Tire & Rubber Company

Because of space limitations it was necessary to condense this discussion.

SEC. JOHNSON: There are, I think, four major items which we must consider when we think of support for our Modern Army. The first three of these are rather basic to any undertaking; they are "Men, Money and Matériel." The fourth in importance, when you think of an undertaking as vast as the one we are considering, is "Economic Considerations." The four gentlemen who compose my panel fall into these four categories and I shall call upon them to answer your questions.

The support of an Army is a very broad subject. There is personnel support and administrative support; I suppose you could say political support and public support, in other words, a large variety of support. This morning we will endeavor to consider only the logistic support of this Army we are talking about—the Modern Army. This still leaves us a very broad subject, since logistic support involves feeding, clothing, housing, equipping and supplying the Army, all of which when combined is an enormous undertaking.

In order to understand what is involved in supporting the Army, I think it is necessary for us to first analyze what we expect this Army to be capable of doing. In other words, what are the principal tasks of this Modern Army? I have selected four which I think are sufficiently broad to cover all of the tasks we expect the Army to do.

First, we must maintain the necessary forces overseas to support our governmental objectives. The majority of the Army forces overseas are located in Europe and the Far East. Of course, we also have Army personnel in varying numbers spread throughout a large part of the free world.

However, in order to be able to reinforce our overseas forces and to react to contingencies outside the areas where we have substantial numbers of forces, it is necessary that we maintain mobile combat-ready strategic forces at home. This is the second task which I have listed.

The third task is to provide the Army forces required for the defense against air attack. This is presently a rather controversial task but it is one that the Army traditionally has been concerned with ever since the advent of the ability to attack through the air. We in the Army feel very strongly that the Army should continue its role in this regard.

The last task which I have listed is to maintain the required mobilization base. We can't hope to maintain a sufficiently large Army to deal with every contingency; therefore, we must have the ability to mobilize additional forces when required. This ability depends upon our mobilization base.

Ten factors affecting the support of the Army

What are the factors which affect the support of the Modern Army? I have selected ten as being the most important. I'll run through these factors and pose some typical questions without endeavoring to answer them at this stage. I do this with the thought that these questions of mine may serve to stimulate other questions or ideas in your minds.

(1) Mobility. The Modern Army must be a mobile army. This mobility must be both strategic and tactical. Now how will this increased mobility affect the support requirements? We must insure that the lack of appropriate support does not degrade the required mobility.

(2) Firepower. Our Modern Army has greatly increased firepower. How does this increased firepower affect the support requirements in the field of logistics? Do our more powerful weapons mean that we will require fewer weapons? Will the ammunition and fuel tonnages therefore be decreased or will they be increased?

(3) Battlefield Surveillance. Longer range weapons create a requirement for being able to select targets further out in front. Greater mobility requires that we be able to react more rapidly. This means that our battlefield surveillance capability must be better. We have got to be able to locate our target more rapidly and more efficiently. What types of equipment do we need to support this requirement? If we can locate our targets more efficiently, will that reduce the logistical requirement for ammunition?

(4) Dispersion. Operation on the atomic battlefield will

require greater dispersion than ever before. This dispersion increases the difficulty of providing the necessary logistical support. Distances are greater and control is more difficult. Also there are requirements for dispersion of industries here in the United States. Are we doing enough in this regard?

(5) Immediate Readiness. Are we ready to support the Modern Army in the field today? Do we have adequate reserve supplies?

(6) The Modern Supply System. What are the characteristics of a modern supply system? Does our supply system meet these characteristics?

(7) Increased Cost. What cognizance has been taken of inflationary costs which may be present in the coming years to insure that support of the Army will not be lacking due to an inadequate budget? What is the value of our present Army inventory? How much is required each year in order to continue the modernization of the Army? Has the complexity of the equipment placed it out of reach of the Army?

(8) Procurement and Production. What sort of plan does the Army have for procurement to meet the Modern Army's requirements? What is being done to insure that we have the proper mobilization production base? What steps are we taking to reduce the procurement lead time? Why is so much of our procurement done on a negotiated basis rather than by formal advertising?

(9) Complexity of Equipment. Has our new equipment become too complex for the Army to operate and maintain?

(10) The High Rate of Obsolescence. How can we insure that the efficiency of the Army will not be endangered by the high rate of obsolescence of equipment? The new equipment which we have is becoming obsolete much faster than ever before. Since this is true, when should the Army standardize an item and commence production procurement? Are advancements in the state of the art so rapid as to preclude completely equipping an Army with modern equipment?

Mr. Johnson

Gen. Itschner

Gen. Traub

Dr. Striner

Mr. Trainer

The gap between requirements and resources

I think you can see that there is one consideration which is implicit in all of these factors and the questions which they generate. It is that our big problem in supporting the Modern Army is the ever increasing gap between what we require to support the Modern Army and the resources we have with which to provide this support.

I now invite you to throw questions at us.

QUESTION: My question consists of three parts: How much does the Army need to support it adequately? How much can the economy afford? And how do we get it? And particularly, what can the Association of the United States Army do to help get it?

SEC. JOHNSON: That is a difficult triple-barreled question. I am going to pass it to three members of the panel and we will hope that the fourth member joins in.

First, I will ask General Traub to answer the question of How much do we need to support the Modern Army?

GEN. TRAUB: Since I have been on the Army budget job, the Army has taken the position that it needs about $13.5 billion per year to support a modern army adequately. We are not close to that goal. The appropriations bill the Congress sent to the President included about $9.3 billion for the Army. This, as you can see, is something over $4 billion short of what the Army needs.

SEC. JOHNSON: Would you like to show us how that shortage affects logistical operations, and particularly procurement?

GEN. TRAUB: The Army estimates that year in and year out for at least the next five years it needs about $2.8 billion a year for the procurement of equipment and missiles. It arrived at that conclusion this way: We estimate that our inventory of capital goods, the big items, amount to about $14 billion total. We estimate that about ten per cent of this a year is consumed by usage, obsolescence, and wearout. Therefore, just to keep even, we need $1.4 billion a year.

But in addition, in order to support the needs of x number of divisions in six months of combat, and in order to support x number additionally in training for six months, we need another $6 billion, to bring the total inventory and to achieve a dollar readiness of $20 billion of inventory.

To do this, we think we should have an additional $6 billion over a five-year period; this amounts to $1.2 billion yearly which we add to the $1.4 billion for a total of $2.6 billion. We have added $200 million more to maintain our

mobilization reserve requirements; we feel this is essential under the conditions existing today.

SEC. JOHNSON: I think that is a very adequate answer to the question, and it covers the Army five-year plan. The obsolescence, wearout and usage factor is not a guess. It happens to be ten per cent, but it has been carefully studied over a long period of time as to actual conditions and it is quite accurate. So $2.8 billion, therefore, is the amount that the Army needs per year in the procurement of equipment and missiles account.

The second part of the question dealt with the ability of the country to support the Army economically. I am going to ask Dr. Striner to answer that portion of the question.

DR. STRINER: Speaking generally the ability of the United States to support a major defense effort has never been questioned. We are capable of expending much more of our resources than we now are in order to support an adequate defense effort.

Let me very quickly indicate the source of the funds. We are able to expand our production of the resources themselves very quickly but the funds seem to be rather short.

First of all, we have the economic growth of the country itself. This gross national product is the value of all the goods and services which are produced. I predict that in fiscal 1961 the gross national product of the United States will increase about five per cent over the current level, which would put it at about $525 billion. This is not an excessively large increase, for two reasons: First of all, we will still be making up for the previous recession, and the contemplated slowdown resulting from the steel strike. At the present time the gross national product is running about 14 per cent higher than it was last year. The gross national product increase means that tax revenues increase, and become available for distribution or use by the government.

Secondly, we have our tax base. At the present time we are paying less per capita with respect to our income than we have for a number of previous years. This may be a bit shocking, but it is the case. When we compare the per capita tax payment in the United States to per capita income, the figure at the present time is under 11 per cent. In 1953 and 1954 it was a little more than 14 per cent.

A third area happens to be deficit financing. This is a rather complicated subject. There has been a good deal of concern over the extent to which the United States is going into debt. But at the present time we are better off with respect to the national debt than we have been at any time since the end of World War II. I say that for this reason: Although the national debt has increased absolutely in terms of dollars, the national debt relative to the gross national product has been decreasing.

If any one of us here was in a position to increase his personal debt by one per cent a year, at the same time that he was increasing his income by five or six per cent a year, I think there would be much less concern over the amount he owed, because the real problem is not how much he owed but how much he owed with respect to how much he was earning. And the earnings of the United States, or the assets of the United States, are in reality its gross

national product or its ability to produce goods and services.

At the present time, if we compare national debt—our entire national debt—to the amount which we produce in one year in this country, the ratio is 1 to .61 per cent. In 1946 the ratio was 1 to 1.3. In other words, we were in debt or in hock to the degree of 30 per cent more than we were actually producing. In 1948 the ratio was 1 to .98. Today the ratio is 1 to .61 and it is the lowest it has been since 1946.

What does this mean? Let me use a few figures because the real question is, how much could we add in the way of funds for the defense activities of this country?

If we take the gross national product projection for fiscal 1961 of $525 billion, the Federal Government tax take on the additional $25 billion which we would be producing will be $4.2 billion.

If we were to restore a part of the tax base of 1953—let's say 12 or 13 per cent—we would be able to pick up an additional $2.1 billion. If we add that $2.1 billion to only 60 per cent of the increasing tax revenues available to the government in 1961, which will come to $5.4 billion, in 1961 this government could have an additional $7.5 billion available for defense expenditures.

In addition, if we increase the national debt by only one per cent—remember now, we are increasing debt by one per cent while the assets are expected to increase by five per cent—we would have an additional $2.8 billion available. The total is $10.3 billion, with only one per cent increase in national debt.

Let me say then that we have the assets. We have much more available than I have indicated, if we want to exert ourselves. I think the real question has never been one of economic exertion or one of economic resources. Perhaps the real question has been lack of intestinal fortitude, an unwillingness to face up to the demands of the defense situation. I think that in 1961, if the same outmoded arguments are given that we can't afford an additional dollar for defense, the Administration—whichever party happens to be in power—will be delinquent.

SEC. JOHNSON: I am going to ask the gentleman to read the third part of his question so that everybody will understand what Mr. Trainer will be answering.

QUESTION: The third part of the question related to the preceding parts and is, what can we, as a people, do in general and what can this Association do specifically, to enable us to provide adequate funds for the Army to fulfill its true role?

SEC. JOHNSON: Mr. Trainer, would you take a shot at that?

MR. TRAINER: I think I would like to answer that by looking at just where we stand today with regard to where we stood years ago. This is the first time to my knowledge that any generation has experienced two world wars and a police action which bordered very closely to being a major action. If we start at World War I with essentially nothing in the way of capacity, and we had really nothing at the start of World War II, and take a measure of where we are today, I think we must recognize that we have come a long way and we have gained a terrific amount of experience and knowledge that may be called upon if needed.

At the beginning of World War II we had essentially no loading plants, no big ammunition depots. We had very little ammunition manufacturing capacity. Our aircraft manufacturing capacity was very low. Think of the way that that has been expanded and where it is today.

In the ammunition field and in the automotive field and the tank automotive centers and the ammunition centers and ordnance depots that we have, that are well equipped today and are in standby, ready for immediate use, I think that we have come a long way. We have learned a lot.

The police action that we had in Korea taught us something, too. At the end of World War II we scrapped a lot of equipment. When we had a requirement for 155mm shells that were in short supply, there was nowhere you could go in the United States to have those made. Nobody had the press capacity or the machining capacity to produce those shells. So you had to start from scratch and produce the forging equipment and the machining equipment and create the facilities. Those facilities are available today in standby and in good condition.

During his address at the Fifth Annual Meeting's banquet, Secretary Brucker takes time out to introduce the Soldier of the Future. The soldier inside is Sgt. Donald H. Knigge, 1st Battle Group, 10th Infantry.

As an Association and as a people, we should see to it that a condition of readiness is maintained by keeping in close contact with members of Congress, and letting them know that we as individuals realize the importance of this subject, and that the moneys must be made available to maintain these facilities and to improve these facilities over the years.

SEC. JOHNSON: I am going to ask General Itschner to answer what seems to me to be a part of this question that we haven't quite answered. This relates to the $1.2 billion we feel we need beyond replacement of obsolescence and usage and deterioration.

In other words, that is the part of this amount of $2.8 billion that we need to modernize the Army.

GEN. ITSCHNER: I think that the requirement for much larger expenditures, more modern equipment, stems from several characteristics of the Modern Army. We all recognize, for instance, that the Modern Army must be mobile to an extent that no Army has ever been before. We can not get along with World War II equipment.

For instance, the Modern Army must be able to concentrate and fight and disperse with a minimum of re-supply, with a minimum of maintenance. That means we have problems of fuel supply, fuel consumption; problems of greater distance that we have never had before; problems of more rapid supply, signal communications, aviation, helicopters, and so on.

All those problems of mobility must be solved by the increases in complexity of equipment, increases in durability of equipment, ruggedness, and capability. All those things are expensive, and we must accept those costs.

Likewise, in the matter of firepower, we must be able to support equipment that we have not had before. We must acquire new and increased technological knowledge through the people who manufacture the equipment. That increases the cost and must be accepted.

We know our potential enemy is devoting a large share of his budget to increases in his equipment in complexity, cost, and numbers. We must recognize and accept the additional burden.

SEC. JOHNSON: To my mind this whole question is so important that I would like to nail one part of this problem myself, and that is the accusation that the Army hasn't gone far enough in modernizing itself. I have felt for a long time that there is a complete misunderstanding about this, and I have been trying to get—and I think I have gotten—some concrete information.

A short time ago I asked the seven technical services to prepare a list of all those items which have been introduced or are being introduced into the Army since the Korean war. They did so. It is a very interesting list. By agreement it was divided into four categories:

First, items of equipment that have been introduced into the Army and are operational since the Korean war.

Second, those items of equipment on which we have placed supply contracts but which have not yet reached the Army but will as soon as the supply contracts begin to produce.

Third, those items of equipment which are under engineering test and evaluation. This is the last process before you place the supply contract.

Fourth, those items that are under development, which we propose to introduce into the Army as soon as the development and the testing are completed.

It is interesting to find, gentlemen, that the list includes 525 items, and these range all the way from the largest and most complex items we have in the Army down to the small but still very important items. The list is divided roughly about 25 per cent in each category.

This is a major effort in modernization. Anyone who says that the Army hasn't undertaken to modernize itself is completely mistaken. The fact that only a quarter of the items in this list are presently operational with troops is the result of the availability of money and, to a certain extent, the availability of time.

But the matériel has been conceived, it has been developed or is being developed. We have placed contracts and we have made the matériel, 25 per cent of it, operational already.

I think we should all know that the accusation that the Army is not modernizing itself is incorrect and is not a fair accusation.

Dr. Striner: I partially disagree with a few of the statements which have been made. Let me first support the idea that the Army is attempting to modernize.

One of the problems I think that we really have is how do we get more money? I can speak freely as an outsider. It seems to me that the position must be taken that when the Army submits a budget—and a budget that has been conceived carefully and painstakingly—the position must be taken that when that budget is cut, the degree to which that budget is cut dilutes the effectiveness of the defense forces.

You can't very well ask for 13 or 14 billion dollars and take the position that everything is still not too badly off when you get only $9 billion. It is very badly off and it is bound to be badly off for this reason: we are no longer supporting one army. We are forced by circumstances to support two armies. We are supporting an army which has an atomic capability and we are supporting an army, or should be supporting an army, which will have a limited-war capability.

This is quite a luxury, but unless we can afford the luxury we are saying that we can't afford the luxury of existing as an independent nation. We are supporting and have to support much more in the defense establishment than we have ever supported before.

This means that when pressures are exerted to cut budgets we have to exert counter-pressures to increase budgets. The Army is always under pressure to take less than it is asking, and we have to recognize that it means we have to counter these pressures by whatever means we can use. We are spending almost as much on the purchase of agricultural surplus commodities as our entire foreign aid program—more than $4 billion. One billion dollars alone is spent to buy wheat.

These represent certain types of pressures. The Army has to get in and fight for its money as it has never fought before.

In addition to these remarks, I would like to say one thing with respect to the machine tools question that came up. I don't doubt that machine tools in certain areas are quite adequate. But there seems to be evidence that the machine tools picture is at least a spotty one. For example, in 1957 there were 4,300 specific requests for lay-away tools to the production equipment redistribution group by defense industries.

Of this number, only 1,500 items were available for allocation to meet the intended purposes. And of the number allocated, only 791 were found acceptable.

Just as we need weapons which are of a later vintage than World War II so we need machine tools which are of a later vintage than World War II.

Sec. Johnson: I think that while you have expanded on Mr. Trainer's statement you haven't controverted it. What Mr. Trainer said was that we are in better condition than we have ever been before. And even with the percentages you mentioned, we are in very much better condition than we have ever been before, in so far as the availability of equipment.

Question: We will never be alone on any battlefield. We are going to have allies on both flanks. If we are able to stay in position, it will be because our flanks are holding. I would like to know what part of the gross national product our allies are earmarking for their modernization and defense. I refer to such countries as Italy, France, Germany, Belgium, and England. We have issued them a lot of equipment and they still have it. But are they as serious about modernizing and taking care of our flanks as we are about staying in position ourselves? I think this intention would be reflected by some indication of what they are taking out of their gross national product to devote to modernization of their armies. Could you answer any part of that?

Dr. Striner: I have not examined the economies of the countries you have mentioned with respect to the portion of their gross national product they are dedicating to defense activities at the present time. Let me say this, however: In the not too recent past a number of the countries which you have mentioned have dedicated large parts of their output to defense activities and at a time when their national economies were least able to sustain the drain.

For that reason a good part of the so-called foreign aid program is really a military aid program.

We find, for example, that the Turks are setting aside national resources, such as manpower, for military purposes when their economy can least sustain this drain. Let's as-

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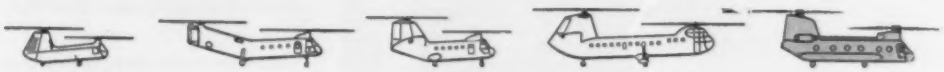

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sume, for example, that the Turks are only using ten per cent of their gross national product for defense purposes. This can be very deceptive because that ten per cent may be so vital to their economy that it is much more of a drag on their economy than ten per cent would be on our economy because we have much more fat built on. Because of this we have had to give the Turks much more in the way of aid.

I have not answered your question directly because I have not actually looked into the question in terms of cold figures. But in terms of the general economics of the question, many of these countries are not able to spend very much more than they are currently allocating, and because of this we have had to sustain them by additional military aid.

QUESTION: When we treat this problem we can't isolate ourselves and treat it just as an American problem. We have to treat it as more than just the two armies you spoke of. I think we are practically involved in those two armies plus all our Allies' armies to an extent.

DR. STRINER: I agree. When I used the term "two armies" I used it conceptually. Certainly I don't mean just two field armies. This audience wouldn't make that mistake. What I am saying is that we have to be prepared militarily for certain types of commitments. One is a nuclear commitment and the other is a limited-war commitment.

This is something we have never had to undertake previously. It means that the figures, the dollars, the resources, are not only out of this ball park, they are in an entirely new ball park. I think this Association and military people speaking before groups have to make the message that you can't view the present commitment in terms of any previous commitments.

Unless people are willing to face up to this we are going to be undermanned and we are going to be underarmed. We are going to be obsolescent. I would say in terms of the present problems of the world we probably are obsolescent. I think the desire to do better is here. I think evidence of this whole series of meetings indicates that the desire of the people in the Army is to have a modern army in the complete sense of that word.

Secretary Brucker is interested in the communications network of the air-defense early-warning system

The problem is to convince the people who are in position to exert leadership, and to take the message to the people in order to gain support for the additional resources which must be made available if we are going to move from this present obsolescent position.

You can't say that you are modernizing today. Certainly when you request $13 billion and get $9 billion you are not modernizing. You are lagging behind when you have to run faster and faster to stay in this race. We are slowing down to a walk.

SEC. JOHNSON: I think one conclusion that we can all reach from Dr. Striner's remarks is this: That if we are not prepared, as he expressed it, with two armies, one for limited war, and one for nuclear war, it is inevitable that we will be attacked in the area where we are not prepared.

Anybody would be foolish not to do that. If we are completely prepared for a nuclear holocaust and are not prepared for a limited war, we will get the limited war.

QUESTION: Mr. Secretary, my question is about men, money and matériel. It involves the organizational and system concepts. Listed among your factors affecting requirements are modern supply systems. Would you comment on progress in adapting our present logistical system in the seven technical services to our new weapons system and tactical concepts?

GEN. ITSCHNER: The logistical system for supporting the modern army of which we are talking certainly should meet the following objectives: It obviously must be responsive to the needs of the field commander who is going to use those logistics, and we must reduce the order time and improve the efficiency of the system itself; the shipping time must be reduced.

We must recognize that we cannot afford in the future to have large stocks up near the front where they are needed, and consequently we must be very selective in the supplying of equipment, rare parts and supplies to the field commander. We will have to rely upon our rapid transportation system and order system in order to get these items up to him as he needs them. I am speaking of the less frequently used items.

As many of you know, we do have what we call the Modern Army Supply System, or MASS, for rare parts. That is operated along those general lines of which I spoke, the idea being that it is a system with a high pressure type of pipeline. Things move through it fast and get to the user when he needs them. There are certain dangers inherent in it.

For instance, that pipeline might be interrupted. We must use the most rapid means of substitute supply that we can. I believe that covers the principles of it.

SEC. JOHNSON: I might add one factor. I think most of you know this, but I will mention it. About five years ago we had in the Army Supply System catalogue about 1.5 million items. That has been reduced to 750,000 items that we now carry in the supply system.

I think one other factor applies to General Itschner's statement: it is not only the transportation that has to be more rapid but the communications have to be more rapid.

In other words, we must express our wants more quickly to the source of supply and then by transportation by air or by rapid sea service get the parts back.

QUESTION: Why do we perpetuate the system of having technical services retain control right down to the using soldier, rather than considering the functional approach?

SEC. JOHNSON: The answer to the question involves the principle of whether greater efficiency is obtained by combining organizations under one head, or by having organizations that operate autonomously and thus splitting up your administrative functions.

To my mind the latter is the way to do it. I think that that is what industry has done as it has grown in size. At least the companies that I am most familiar with, the very large companies, have split up into autonomous divisions. They do this because they have found it is the way to operate most efficiently, and in fact to make the most money.

There is no reason otherwise that I can see why General Motors would have perhaps 28 different divisions. If we follow the theory that the way to get efficiency is to combine everything under one head, they would have simply one division or one General Motors. They have many autonomous divisions which operate autonomously with purely staff and over-all guidance from above. Mr. Trainer, would you express your opinion?

MR. TRAINER: I think you will find in industry the greatest progress has been made in companies which centralize an operation within itself and give almost autonomous control to a person or division and keep that responsibility fixed.

I think the Army has found that when they fixed responsibility in one contract and held the contractor responsible for the development, design and manufacture, with Army supervision over what they were doing, they got the quickest, the best and the cheapest job.

GEN. ITSCHNER: I would like to speak again of the logistical system in support of the field army. Actually we do recognize the need in the extreme forward areas of small general depots rather than technical service depots. These small installations will be very mobile and they will have all the essential supplies regardless of the technical service that supplies them.

Going back from that point, we also recognize—and I think this is perhaps a change in feeling—that in the corps (and these would be larger corps that we visualize, more like the field army in World War II) we would have support commands which would coordinate the efforts of the various technical services. But going back from that point, whether you have technical services supply or functional supply systems you would need specialists in each field anyway, and, therefore, nothing would be gained by a functional system.

That is particularly true because your maintenance is so intimately tied up with your supply. The two go together.

For that reason we feel that the corps is the farthest rearward element that could have the functional type of supply.

QUESTION: Speaking of the conventional type weapons and vehicles we have now. What has happened in many cases to spare parts?

In some cases we use cannibalization control or uncontrol, call it what you like, and many items are critical, which, although they are small in nature, would deadline the vehicle for three or four months. Have we completely stopped making spare parts for these old families of vehicles or weapons?

SEC. JOHNSON: We are continuing, sometimes with great difficulty to maintain adequate spare parts. The farther away you get from the original production of the vehicle, the more apt you are to find that the source for parts has disappeared. The companies that made those vehicles have changed their models, they may have changed their power plants or their whole power line and may have disposed of the machinery and equipment necessary to make the parts.

Nevertheless Ordnance Tank-Automotive Command is continuing to be engaged in contracting for those parts. The final answer is to replace those old vehicles with new and modern vehicles that can be supported with a great deal more ease. The problem is simply that we have not had the money to do it. Our vehicle fleet is approaching an average age of ten years. I am talking about tactical vehicles. That is a very serious condition. It means a major operation toward replenishment of our vehicle fleet.

GEN. ITSCHNER: I think another factor is the great desirability of standardizing, particularly in any one theater, so that you have only one or at most two different types of the same item to supply with repair parts.

That has been particularly acute in the [Corps of] Engineers field because at the end of World War II we had something like 60 or 70 different makes and models of generators. Obviously the repair-parts problem becomes almost unbearable when you have that great a spread.

Nowadays there are many types of equipment of which we have only two models and we would like to have only one.

GEN. TRAUB: Spare parts are purchased out of the operations and maintenance appropriation. This particular appropriation has given us more trouble in the last few years than any other that I know of, because we are so short of money. This appropriation lacks glamor and it is most difficult to get sufficient funds in it.

QUESTION: Has the complexity of the equipment priced it out of the reach of the Army?

Mr. Trainer: Well, as everybody knows, costs generally are going up. However, there are many items in which the costs have decreased. There is no question about it: to maintain an Army and to get the equipment that you need you are going to need far more money than you have had in the past.

Sec. Johnson: I think we might rephrase the question a little bit and ask whether we can afford to put the necessary equipment beyond the reach of the Army, because if we do, we are recognizing the possibility of defeat.

Some of our modern weapons, such as missiles, do cost a great deal more than the type of firepower that we used in the past. But we get a great deal more from them. They carry a bigger punch. It is not so much that the price of the individual item has increased as it is that we need a large number of the items in order to accomplish our job.

Dr. Striner: Perhaps the best way to look at these costs is the basis of the function which they serve. Actually what is involved is the replacement of an entire system which itself may have been much more costly when all of the indirect costs are taken into account. For example a missile which no longer needs an airfield or support personnel to the degree that airplanes have called for in the past, or Army weapons which may cost more than some other weapons you have had but which may cost less in terms of the function when you figure that you are able to eliminate some of the support and logistics elements the older weapon required. Many of these items are actually less expensive, more economical, even though the final item may cost more money.

Sec. Johnson: Even though the over-all expense is greater, if the force you have to meet is greater, we have to meet it anyway. I think that is the real answer.

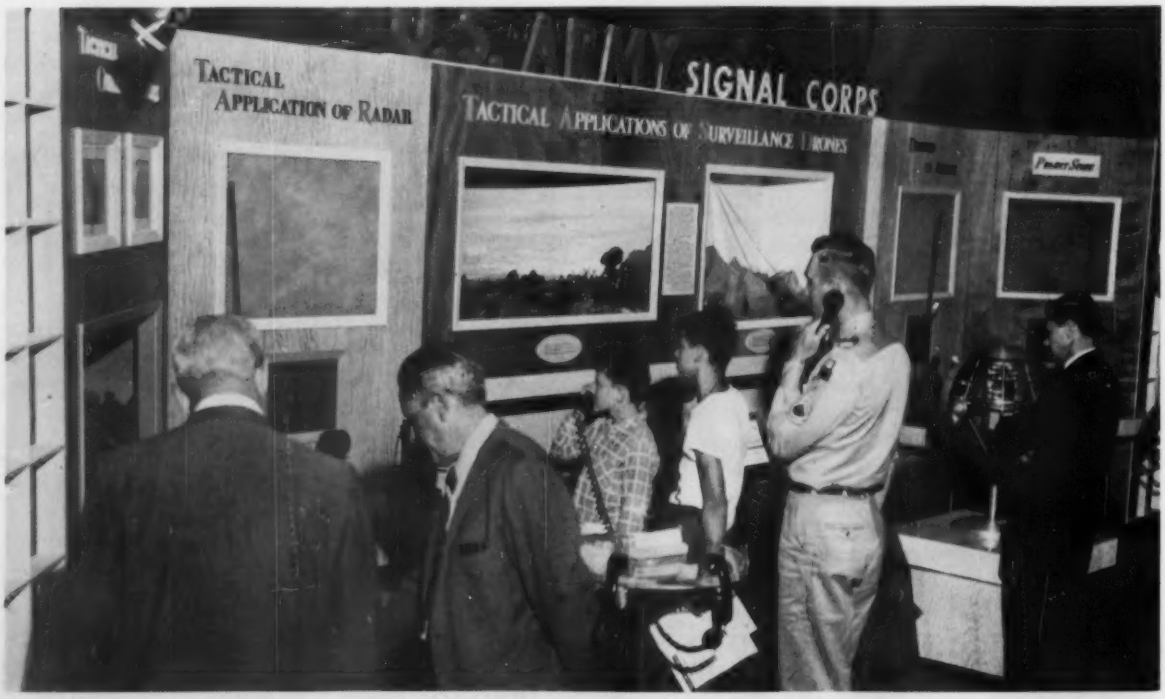
Question: Aside from price, what of the complexity of the equipment itself, keeping it operable, keeping personnel who are capable of operating the equipment, and the other problems involved?

Is not the complexity placing it beyond the scope of time for training operators and repairmen?

Gen. Itschner: There is no question about it. The equipment we are getting today, the equipment we hope to get tomorrow, is very complex. It is going to require greater time to train the operators. But the complexity is largely built into the maintenance and repair of that equipment rather than the operation of it. The operation is just a matter of knowing what dial to use to get to a certain point. We do have a very serious problem in training personnel after their basic training. We have only three or four months in which to train them and still get some service out of them unless they reenlist.

It is a problem that should be considered in all of our development work to make sure that the equipment can be operated by as few skilled people as we can get.

Sec. Johnson: I think we could add also the factor of the mental caliber of the men we get into the Army, and their education. This has improved materially in the last two or three years through allowing the Army to accept those with certain intelligence capabilities, and furthermore through the development of a very extensive educational and training system within the Army, which is excellent. I think that the amount of schooling a soldier gets now is remarkable.



The small fry shows interest in the latest developments in communication at the Signal Corps exhibit

PANEL DISCUSSION

AUSA
1959 Annual Meeting

MODERN ARMY

Readiness Through Research

MODERATOR

Lt. Gen. ARTHUR G. TRUDEAU
Chief, Research & Development, Department of the Army

PANEL

Maj. Gen. AUGUST SCHOMBURG
Deputy Chief of Ordnance, U. S. Army

Dr. JAMES W. MCRAE
Vice President, American Telephone & Telegraph Co.
Chairman, Army Scientific Advisory Committee

Mr. T. F. MORROW
Vice President, Chrysler Corporation

Col. R. B. PARTRIDGE
Chief, Communications & Electronics Division, USCONARC

Sgt. 1st Cl. JOSEPH F. CONROY
Combat Vehicles Division, USCONARC

Because of space limitations it was necessary to condense this discussion.

GEN. TRUDEAU: This panel will discuss with you research and development for a modern Army. This is a most challenging subject at a time when science and engineering are striving to fashion new advances in power, electronics and space, while the sinister shadow of Godless, powerful communism reaches across the oceans and the continents.

Our program consists of the brief report I am going to give you on the over-all Army research and development program and then answers by the panel to questions from me initially and then from you.

I would like to review a few points to bring the meeting into focus. Why is research and development important? Because it determines the future weapons and equipment that soldiers will be using in combat. What we are doing now will, to a large extent, determine almost in its entirety everything that we are going to have available by 1965 and in some cases it will reach up to 1970 due to the tremendously long lead-time between concept and production and distribution of items under our present system.

Science and technology are prominent factors in the research and development equation. Our basic research program continues to investigate the latest discoveries and inventions so that they can be integrated into the development par of the program which results in the hardware that rolls off the assembly lines of industry.

We contract for our basic research out to industry, to some 180 colleges and universities, and some laboratories. Ten major fields in 74 sub-fields are covered, from mathematics to human factors and from medical projects to polar and arctic research.

We will continue to stress this basic research because without it there would be little future development. In fact, there would be nothing new coming out in 1970, unless we continue to expand our basic research.

The next step in the cycle is what we call applied research and development, and to most of you who are in industry this is a very familiar term.

The results of basic research are incorporated into weapons and equipment designed by the industrial engineer, guided by the requirements of the military.

This has resulted in a large spectrum of developments in the fields of mobility, communications and firepower, and also in space, and in weapons and equipment designed for use of the individual soldier.

The need for more standardization of components

In this connection there is also a great challenge that I would like to give to industry: that is, that we must look for greater standardization. This is perhaps more true in the electronics industry than in any other.

The second thing is, of course, the development and improvement in the machine tools that are so necessary. Some of our latest projects are requiring at least four and perhaps 20 times as much manpower as I consider necessary. This doesn't mean that everything could be cut by twenty.

As an example, there is no reason why in a panel that has to have 400 holes punched in it, you should punch these holes one at a time when by the use of templates and multiple drills it could be done in four steps.

We have some interesting vehicles under development to give us the mobility that we require on the future battlefield. On the ground we are looking into the GOER-type vehicle, which is the type used in the construction industry with massive or at least very large wheels, with low ground pressures that give you real cross-country mobility.

Our trucks by and large are not really made for cross-country mobility. We need new tanks and we are getting new armored personnel carriers. The new XM-60 tank is coming off the lines, shortly. Really, it is an old tank mod-

ernized. It doesn't suit me. It has a new gun. It has a diesel engine.

We need breakthroughs in power plants and in new weapons and we are working on them hard. We have to come to a lighter tank with still a substantial amount of armor protection if we are going to meet the challenge of the 1960 decade.

In the air we are looking for the type of vehicle that will give us a take-off and landing characteristic of the helicopter and the advantages of the fixed-wing aircraft in forward flight.

You have probably seen some pictures of the flying test beds. Some look like discs or flying jeeps. Call them what you want. Some of them are propelled by unusual power plants or unusual means of utilizing energy that comes from existing power plants.

These are the vehicles that we hope will give us the answer to flying low and slow, and taking advantage of clutter and contours of the earth. But we must be able to fly quietly. The development of a motor that will give us relative quiet in an aircraft that can fly above the battlefield is one of the greatest challenges I can toss out to the industry.

Communications in electronics have enabled the Army to increase its command and control capabilities to the degree required by mobility and dispersion. That is, they will when we get these communications in production and get them into the hands of our troops.

Gen. Trudeau

Gen. Schomburg

Dr. McRae

Mr. Morrow

Col. Partridge

SFC Conroy

Included in this area are some of the surveillance drones that can penetrate enemy lines and bring back information recorded by radar, infrared, photographic and television equipment. This information can then be sorted and evaluated by automatic data-processing systems to give the commander the facts needed for the decision.

Here I want to agree with General Hershey's panel on manpower that there is a danger of overdoing this, and developing machines that a man can neither operate nor maintain. At the battle group level and even the division level I have my fingers crossed.

Firepower is always a critical part of our programs. We have improved rifles and other small arms soon to be operational that will out-perform anything we have now, and still better ones are in the offing. This is essential because what we have today constitute at best only product improvements of what we had in Korea or in World War II. We have not advanced in individual weapons as we have in other segments of our military requirements.

Many types of guided missiles are under development, as you know, to supplement or replace those we have now.

These are all surface-to-surface weapons, fired at ground targets. Fortunately, there is appreciation and realization in the Army, today perhaps greater than it was two or three years ago, that there is still a substantial place for artillery in the future and that the missile and the atomic round do not solve all the problems.

New weapons cannot replace teams of fighting men

One of the difficulties I have particularly is with those in the scientific field who are not acquainted with military problems, who say that if we come up with a Davey Crockett that five men or ten men can operate, that will destroy a battle group, then we can use the Davey Crockett team instead of the battle group. We have to be careful, reaching conclusions like that.

This poses a question itself: What happens between darkness and dawn? To a soldier this is meaningful because when you are unable to utilize effectively all of your firepower, very difficult problems are raised.

The Army, as you know, has an important mission in the air-defense field. We have under development a shoulder-fired missile called Redeye. It is a joint development between the Army and Marines.

You know about the Hawk missile, one of our most reliable, now coming into production for employment against low-flying aerial targets at great distances.

But our most important contribution is going to be in the Nike Zeus. You have seen talk about other systems coming along, and I hope they do. I hope there are better systems than Zeus, and I think perhaps there will be in time. But as of today, and to become available before 1965, there is no other system known or as advanced as far as capabilities are concerned than Nike Zeus. We have successfully fired the sustainer motor. The guidance system is a growth in effect from the things that we have learned from Ajax and from Hercules, and we have no doubt in our own minds that we will successfully develop a weapon that can meet the threat

of the incoming intermediate range ballistic missile moving at 8,000 miles an hour or two miles a second, or the ICBM, which travels at 15,000 miles an hour or about four miles a second. This is not as difficult in some ways as it might seem at first blush.

There is an urgent requirement for such a weapon while we are faced with this growing ballistic missile threat and blackmail of the communists and, as I said, we are confident that in the 1960s we are going to be able to have this weapon in production and in place.

We need to have a good fresh look at the chemical field.

This field, of course, has gained added importance in recent days because of the appeal of non-lethal chemicals.

The advent of these non-lethal weapons, which impair the physical or the mental reactions of the individual, is now having tremendous appeal. We know that the Russian troops in Eastern Europe are equipped with 15 per cent of their munitions in chemicals of one type or another, and carry atropine surettes which counteract the effects of so-called nerve gases. We should be aware of the problem and prepared to defend ourselves.

The Army's contributions to the space program have been substantial, as you all know. I am not going to repeat what they have been. We have enjoyed a very good share of success with our projects under both ARPA and NASA. We have had our failures, too; but we are on the way.

We look forward to participating in the Mercury program for astronauts in space and of launching other satellites. It still comes to our attention that as of today there are no boosters or motors that have been as successful in the large rocket field as those of our Jupiter and Redstone missiles. This is one reason why they continue to be used.

There is one other area that I assure you we are most concerned with, and I mentioned it before, and that is with a key instrument of battle—the soldier. We firmly believe that the man on the ground, well trained and well led, is the key to success, and still is the most necessary and most fundamental part of our national military structure. He is the man for whom we are hoping to develop new methods of preserving food by radiation; he is the man for whom all of this equipment and weapons systems I am talking about is being developed; he is the man for whom the Medical Corps has developed a bone glue so that after having a broken leg he can walk out of a hospital in 48 hours.

I have deliberately omitted parts of the complete cycle which goes from the concept of the problem to production of our hardware. The role of science, of the technical services, of industry, and of the using troops, is an interrelated one and essential to the accomplishment of the research and development objective.

I wish to announce at this time that as a result of requests by industry, I have recently directed my staff to initiate work toward the publication of a classified Office of Chief of Research and Development document, setting forth the current status and plans of the Army's research and development program, its long-range objectives, and identifying the problems to be resolved. I hope its early issue to those of you in industry will be helpful.

This publication is intended to stimulate research and development by corporations, based on the knowledge that solutions to these problems are vitally needed for the defense of our nation.

The need for new ideas and fresh approaches in weapons

There is continuing need for fresh approaches, new ideas, that we are seeking all the time, improved techniques that may lead to superior weapons and equipment over and above what we have today.

While the Army must provide the necessary guidance and encouragement to industry to achieve these goals, it is up to industry to generate and advance the new technologies whereby we will accomplish our necessary research and development objectives. Such a document will fill this need by providing a means effectively of communicating our Army research and development plans and problems to a selected audience of our participating industries.

At this time I would like to begin the panel discussion with a series of questions which are intended to amplify the complete cycle. After one question to each panel member, I will open the discussion to the floor before we move on.

Initially, I would like to ask Dr. McRae: How is basic research contributing to the Army's future, and just how is it integrated into the research and development cycle?

Dr. McRae: It seems to me that there is only one way in which we can look at the contribution of work on basic research. It follows from the fact that technological progress is gained by a combination of new knowledge, and the ingenuity of the individual involved. It is a process involving knowledge and innovation. If we do not keep refilling the reservoir of basic knowledge on which we can draw for new ideas, our progress in this technological race will be inevitably slowed down.

It is interesting to divide the results of scientific research into about three parts. For instance, there are first the very dramatic possibilities that scientific research or the uncovering of new knowledge makes possible. General Trudeau has already mentioned two of these.

It is interesting to note that these breakthroughs are impossible to predict. It is absolutely impossible to foretell what new innovation new scientific knowledge will make possible in the absence of knowing what the new scientific knowledge is going to be. Consequently, the Army has a role to fulfill of simply living with science.

In addition, there are a whole lot of humdrum things—improvements here and there—that have to be made by new

scientific knowledge. The whole business of the technological race in which we are involved is simply saturated with ideas that come from basic research.

GEN. TRUDEAU: Let's turn to the military side for a minute. General Schomburg, as a representative of one of the key technical services, will you tell us how the Ordnance Corps, in brief, conducts its research and development program and the relationship between the Ordnance Corps and the Office of the Chief of Research and Development?

GEN. SCHOMBURG: I would like to address myself first to the relationship of the technical services to the Chief of Research and Development.

General Trudeau's office, along with the entire Army Staff, determines what is wanted, and then of course budget and funds permitting, they give the job to the technical services. We in the technical services then do that job. Actually, industry does a great portion of it.

One of the most difficult problems we face is the transition from research and development to production. This has been true over the years.

The people in the research business want to hang on to it forever. And the people in the production business want to make it easy to make. To get these two together is the real problem. The technical services organized on a commodity basis allows General Trudeau and the Army Staff to appoint one man—and this is certainly absolutely necessary—to get the job done.

To talk a little more about our arrangement at the technical services, I would point out to begin with that we work very closely together. I will give you an example.

If we in Ordnance come up with a new round of small-arms ammunition, we make the Quartermaster completely aware of the program. This is so the Quartermaster can take advantage of what we have found.

Assistant Secretary George H. Roderick gets the answers to questions about a wind speed and direction recorder.

We make the Medical Corps completely aware of what we are doing. The Medical Corps in turn then can devise medical treatments for this new and lethal ammunition. As a matter of fact, the Medical Corps gets in the program with us at the very beginning. It helps us to determine really what is the most lethal. This job is done at the Wound Ballistic Laboratory of the Army Chemical Center, the finest wound ballistic laboratory in the world. So we work in this regard very closely together.

As for what we do to avoid duplication, General Trudeau's office gives us the rules. Basically one of us may be custodian in one instance, and another in another instance.

In the technical services we call our relation with industry the Army-Industry-Science Team. We in the technical services do just a small portion of the job. The big job is done by industry.

But the unique feature about this is that we feel that in the Army we must have technical capability to supervise the job. We in the technical services have to know what is wanted. We have to be the go-between, between the man who uses it and the man who is going to make it. So we must have this knowledge.

We have to have real in-house competence. We can't have it by watching someone else do the job. You have got to do a little bit of it yourself. Our own technical people keep up to date and know and are able to do this by doing. They do just a little of the job, but the big job and the main job is done by industry. Our only excuse for doing a part of it is so that we know exactly how this job can be done.

Any industrial concern that can qualify from the security viewpoint can come in and get all the information that we have in Ordnance in the area in which they have competence and facilities.

This serves two purposes. We want ideas from you, and this is why we want you to know what we know. In addition to that, quite often some of you in industry go out and work on your own. You work voluntarily, with your own money, and then you come to us. When you come we would like that whatever you bring be something we want and are able to use. If you are working in the dark, you may bring us something that we have already tried or is inappropriate.

The question of getting information from the battlefield is one of the toughest ones we face. The Signal Corps has organized a special agency for this, the Combat Surveillance Agency. This is a real tough one. To get this information off the battlefield—and then you have really only half the problem solved—the great mass of information you have, must be digested and put in usable form. This is a really tough problem. If anybody in industry can help with this one, we will welcome it.

Our main job is to take care of the fighting man on the ground. But in doing this job we have accumulated a real capability for the space age. Let me run down the technical services just to give you a little idea.

The Chemical Corps has competence in the field of thermal radiation and in the neutron dose inspectrum measuring.

The Transportation Corps is developing techniques for handling missiles and moving missiles in space vehicles.

The Quartermaster Corps has an interesting program in the possibility of using algae to produce food and oxygen.

The Medical Corps is, of course, in the biomedical space field.

The Corps of Engineers is interested in mapping the moon. And, of course, with their construction capability, they can build space sites anywhere.

You know about Ordnance and Signal.

To sum up, General Trudeau and his office determine what is needed. If we have the money, we get the job. The technical services carry out that job. We have an in-house competence, one of the real keys to doing a good job. Industry really does most of it.

A good job is being done as a result of our capability in the fields that are normal to the Army. We have also a great capability for the space age.

GEN. TRUDEAU: Let's turn from the Army side to industry. I will ask Mr. Morrow to comment on how industry first enters the R&D cycle and also to make any other comments he cares to.

MR. MORROW: General Schomburg says industry does most of the job. I take issue with that. I think we are teammates. There are times when industry does a good job. But an awful lot of what we have today came out of the Army's technical services.

In our experience, industry should enter the research and development cycle at the outset of the program or as quickly as feasible from a budget funding viewpoint. In some cases I hope industry may be of service to the country and the Army by bringing forth new concepts in advance of the beginning of a research and development project for a particular piece of matériel.

On the former point, starting with the beginning of the Army's R&D cycle, I believe that an example of our experience on the Redstone ballistic missile may serve to illustrate the approach and the philosophy used on this most successful ballistic missile. I say "approach" because I think it is most important that at the outset of any program it must be decided who will take the lead, and therefore who will be responsible in the interests of savings in cost, lead-time, and early supply of equipment in sufficient quantity. In some cases this may be industry; in other cases it may be one of the technical services.

In the case of the Redstone missile, Ordnance took the lead through its guided missile division now known as the Army Ballistic Missile Agency, Ordnance Missile Command, at Redstone Arsenal. This was both proper and correct because the fundamental knowledge had been wisely gathered together in the form of a strong nucleus of scientists at Redstone Arsenal. I am referring to the scientists and military officers and career men who are in the Army and first experimented with Army rocketry as far back as 1935. This group was supplemented by the foresighted acquisition of a group of most outstanding ballistic experts in the world, after World War II, and I refer of course to Dr. Von Braun and his associates.

At the outset we were assigned a number of missiles to produce, and given a schedule which included a number of research and development missiles. I might add here that in December 1957, when Congress was investigating the missiles program, we were able to state factually that a program set up in 1952 was on schedule in December 1957.

The Army had insisted from the outset that schedules must be kept, and this basic discipline served to reduce lead-time, manpower requirements, and cost. Research and development must be scheduled to obtain the necessary military posture of the nation.

Our job at Chrysler was one of support in production engineering, production, and those research and development tasks as might be assigned to an industrial contractor. In this supporting role we started out while the Redstone was still in the early phase of the research and development cycle and assigned 26 of our top research and development engineers to the project in 1952. This group of men were trained at Redstone Arsenal, working side by side with the Army's scientific team.

As you all know, the first research and development Redstone was fired by the Army in 1953. Therefore, our people had the benefit of learning while doing, and living with the early phases of research and development on the Redstone weapon. The nucleus of 26 R&D engineers expanded to 650 people on the rolls in October 1955. During this period from 1952 to 1955 we continued to learn, but more important perhaps, we started to produce various components which led eventually to the production of our first complete missile in November 1955.

We built our organization very carefully, developing it in depth, anticipating a crash requirement based upon past experience when we built the first production medium tank plan for five a day and expanded to fifty tanks a day in 1941 and 1942. We were not going to be caught napping if we could help it. This gamble paid off in results because we were able to expand from the October 1955 manpower figure of 650 people to more than 11,000 in October 1958, on schedule, with high quality and reliability.

You might be interested in the fact that while we were expanding to 11,000 personnel, we had fifteen applicants for every engineering position. We hired only one out of fifteen. We pursued a policy of using engineers only on engineering jobs, and training technicians to do the routine technical jobs.

By 1956, just to fill you in on the interim period, the organization grew to 2,200 people. In 1957 we had 4,500 assigned to the project, and were involved not only in the

research and development phase of the Redstone but were entering into the Fleet ballistic missile program, which had as its basic missile weapon the Jupiter intermediate range missile, and were preparing for the production of the initial operational capability missiles necessary for the Army's deployment of Redstone as a weapon.

In the middle of 1957 we had also been assigned the job of producing the Jupiter IRBM, in addition to the Fleet ballistic missile assignments.

In 1958 several things of interest happened to the program. Redstone had entered the production phase and our engineering staff was available for the supporting role in the Jupiter program. By the firmed-up funding approval received in 1958, the Army's Michigan Ordnance missile plant was converted from a Navy jet engine plant and the first Jupiter missiles were produced eight months after go-ahead while maintaining the Redstone missile on schedule.

Jupiter was actually produced four months ahead of schedule. Credit for this must go to the Army for its planning and, perhaps more important for this panel's purpose, to the early introduction of industry into the research and development cycle.

I believe in the basic engineering philosophy of building into a weapon or a product a growth potential so that future weapons and/or products can be brought out with assurance, high reliability, low cost, savings in manpower, and minimization of lead-time.

Many of us here today from industry realize the necessity of cutting down lead-time in our commercial endeavors. We are on a fast track in world competition for commercial markets. Much more important is the necessity to cut down more lead-time in the weapons field for national survival. We will not have a crack at growing world markets if we don't survive. I believe the basic program such as Redstone and Jupiter, which have growth potentials as indicated by the clustering of a 1.5 million-pound booster, show the wisdom of this approach which the U. S. Army has utilized in the Redstone and Jupiter programs.

Who's telling who? Mayor R. B. Searcy of Huntsville, Ala., shows model of a missile to Maj. Gen. J. H. Hinrichs, Chief of Ordnance, and Maj. Gen. John B. Medaris, CG, Army Ordnance Missile Command.

GEN. TRUDEAU: You have heard something about the responsibility for coordinating research development. You have heard from one of the technical services. You have heard an approach from industry. Now we want to turn to the Army command, to what the soldier and Army need in the field, and then go on through and watch its development and accept it and test it.

I will ask Colonel Partridge to discuss CONARC's responsibility toward placing these new weapons in the hands of our troops.

COL. PARTRIDGE: Basically CONARC's role in the cycle is to represent the user; that is, the soldier in the field army.

In detail the Commanding General, United States Continental Army Command, is charged with wide responsibilities in the field of new developments. However I would prefer to break this down into four general responsibilities and name them for you. First, the development of new operational doctrines and techniques; second, development of organizational concepts; third, the development of new equipment requirements; and fourth, the testing of those new doctrinal concepts, operational techniques, organizational concepts, and new matériel.

The first and most important perhaps of the structures available is that of combat developments. Its efforts are devoted to the formulation of these operational and organizational concepts and to the determination of matériel objectives and requirements.

In the combat developments structure there are a large number of organizations. First, starting with the staff section at the General Staff level at CONARC headquarters. Then throughout the Army there are some 28 other combat development agencies and offices, either directly or indirectly of interest to the combat development system. Of direct interest are combat development offices at each of the major schools throughout the Army. Also contributing to the combat development system are agencies in each of the technical and administrative services and in the various operational commands. This over-all structure is currently engaged in well over 200 studies of one type or another.

The point of interest here, I think, is the very broad base upon which the Army's combat developments and requirements rest. Objectives and requirements are not determined in an ivory tower but spring from agencies in close contact with the troops.

To monitor the development of equipment in support of the concepts and requirements generated by combat development, there is established at CONARC another general staff level section called matériel developments. This section is roughly comparable to General Trudeau's office at the Army level.

In addition to the staff section at CONARC there are seven test boards generally representing the various combat arms and physically located in various parts of the United

States. Also in the system or the structure there are approximately 39 liaison officers working directly with important laboratories and arsenals and with industry.

The primary mission of matériel developments is to monitor research and development matériel, to translate statements of matériel into military characteristics and to test newly developed equipment. Matériel development also, I might add, is very heavily involved in the problems of standardization with our many allies.

So much for organization. Very briefly I should run over the normal function of this system. It follows a pattern something like this. Studies are initiated which are designed to ponder the future, perhaps five to ten years out, with a view to determining over-all military objectives during that time. This over-all objective is then resolved into three sub-objectives which I have already mentioned: operational, organizational, and matériel objectives.

The end results of such studies are formalized statements of requirements. These statements are called qualitative matériel requirements [QMRs], and express in broad terms the need for an article of equipment to accomplish a certain requirement.

The conduct of such studies and the preparation of the QMRs is a responsibility of the combat development section.

Finally, to complete the cycle the military characteristics are then forwarded after approval by General Trudeau's office to the appropriate technical service where they are translated into technical characteristics.

In this sense then they become the basis for the activities on the part of our arsenals for industry.

Ultimately the real test of a weapon comes on the battlefield under real combat conditions.

For the lack of actual combat conditions, CONARC strives to test new equipment under conditions that simulate combat to the greatest extent possible.

The difference beween the proving ground type of test and the troop or service type of test is not always apparent, but in my opinion the difference is nonetheless very real and very important.

We in CONARC feel that we have a very important function under Department of the Army in getting into the hands of the American soldier the very best equipment possible in the shortest possible time. In pursuit of this general mission we followed certain principles, and I would like to run through these very briefly.

The first principle that we adhere to is speed of development. A modern army can be modern only if its equipment keeps pace with technology and avoids obsolescence.

The second principle is quality and the third is economy. Then come simplicity and ruggedness. Lastly, there is the principle of compatibility. New equipment must be compatible with battlefield equipment. It must additionally be compatible with the entire logistic complex supporting the Army.

In summary we have a little story at CONARC that I think very well exemplifies our mission. Man in all his wisdom has used the pigeon as a messenger for hundreds and hundreds of years. But just as the last pigeon was being

phased out of the Signal Corps, in approximately 1954, the Chief Signal Officer received a letter from a professor in Pennsylvania who, after many years of experimentation with ducks, showed conclusively that a duck was far superior to the pigeon in flight endurance, homing instinct, susceptibility to training, speed in flight, and payload capacity.

If I remember the story correctly, the duck even offered a logistic advantage in that it flew more miles per quart of bird seed than the pigeon.

Our job at CONARC, we feel, is to weed out the pigeons and foster development of the ducks in this area of matériel developments.

GEN. TRUDEAU: Now let's get down to the user end. I am going to ask a soldier with a lot of experience in this field to discuss briefly the user test agency in connection with our research and development.

SGT. CONROY: General Trudeau, as the name indicates, the primary function of the Use and Test Agency is to test the suitability of equipment for use by average soldiers in the field.

There are two types of tests in this category: The service test, which is conducted by the CONARC board; and the troop test, which is conducted by a selected troop unit in coordination with a specific board or boards. It is at one of these agencies that newly developed equipment is first used by soldiers under simulated combat conditions.

The boards are responsible for recommending type classification of new equipment, furnishing guidance to developing agencies during development, observing and reviewing performance of standard items, preparing and reviewing military characteristics when required, assisting schools in preparation of training literature and selection of training aids, and assisting in the preparation of maintenance packages.

I would like to point out that usually a board has its plan of test provided long before the pilot model is available because the members are constantly keeping in touch with the developing agency. No one board is completely responsible for any one item. Generally several boards are connected with any test of an item. Also, there is no one individual who prepares the military characteristics without coordinating with the various using agencies concerned—that is, schools and troop units.

GEN. TRUDEAU: We have tried to give you a mental picture of the procedures we go through in the development of a piece of hardware or a weapons system. We have gone into it at some length because I think in so doing we have

answered some, and I hope many, of the questions that otherwise would have to be answered.

We have about twenty minutes or so for questions.

QUESTION: I would like to address my question to the Chair. I wonder if you could give us an indication of the percentage of the Army's budget on applied research, basic research, products, and the use or utilization of those products? The second part of my question is: I wonder if you could give us an indication of the contribution by industry toward R&D work, and the percentage of product dollars?

GEN. TRUDEAU: I am afraid those figures are not available. General Schomburg, would you address yourself to that from the Ordnance standpoint?

GEN. SCHOMBURG: Within the Ordnance Corps for this fiscal year the division will be about 20 per cent in-house, in our known installations, and about 80 per cent with nonprofit institutions and industry. To carry that one step farther, after we get beyond research and development and we get into production area, the figures change a little.

It looks this year, fiscal year 1960, as though we will do about ten per cent of our production within our own installations. This is so we can better supervise the production that industry does, and about 90 per cent of the dollars will go to industry for production.

GEN. TRUDEAU: To go a little farther, I could say that about five per cent of our research and development budget is devoted to basic research or pure research. A total of about 50 per cent of the funds available to us are used for all aspects of research, both basic and applied research. Then in the testing field, in prototypes, testing and evaluation, probably about 50 per cent of our funds. That is about the best breakdown I can give you. It is not a matter of secrecy; it is just that I don't have the figures broken down that way here.

QUESTION: I would like to ask Colonel Partridge if there is a possibility that an opportunity for an operational capability might generate and be transmitted to CONARC by an industrial organization.

At this point a QMR is written, as I understand the procedure. I wonder at what point and how that industrial organization might best conduct itself in the future progress in the pattern that you have described.

COL. PARTRIDGE: CONARC, as I said, is concerned with the operational organizational concepts. If you are in need of assistance in seeing the picture of the Army in the future as we see it at CONARC headquarters, then CONARC can help you, and in fact many industrial representatives come down to headquarters at CONARC for this very reason. If you are concerned, on the other hand, with the actual military characteristics and how a civilian concern with a new idea, a new black box, would get to the Army, I can only say that you would deal primarily and initially with one of the technical services.

GEN. SCHOMBURG: May I enlarge on that? One point we have not quite covered is that the technical services owe the Continental Army Command assistance in deciding what they need and what they want. We have to help breach this gap between the state of the art and what they want. So it is appropriate where industry can come in with ideas that they would gain contact with the technical services.

GEN. TRUDEAU: In that connection, in my office I have established an "idea ingenuity" desk. I would welcome any ideas whether spelled out in prospectus or merely an idea. If you know the channel and go to the particular service, this is fine. This is the way we recommend that you do it because we would have to do that ourselves. We would like to assure you that we would welcome ideas from any American whether he is in uniform or not.

QUESTION: Yesterday the panel brought out that hardware was ahead of the soldier, and R&D must not outstrip the soldier. I believe this was given cognizance by your panel this morning. You also brought out the necessity of reducing lead-time.

Is it not this lead-time problem rather than research and development that causes us to place what is truly a prototype in their hands rather than a proved "weaponized" piece of equipment or system?

GEN. TRUDEAU: We would hope that what we place in their hands is a truly developed weapon system. To go back to the first part of your question, this is what we term our studies on man-machine compatibility.

We are very much concerned with this, concerned to the point that when the military characteristics are developed that we try to accompany them with a concept of how such equipment will actually be operated and maintained by men.

With the very complex weapons systems we have today this gives us a tremendous problem in coming up with a method where a soldier who is qualified or who can be qualified can operate and maintain these weapons as simply as possible. This frequently means component exchange. It means "go, no-go" systems, where if a red light comes up, means something is wrong and will tell you where, or if it is a green light it means that the system is working.

QUESTION: In all this research and development that is going on to get your prototype into the field, is there a companion piece going with it to develop the training aid so that you can carry this story to the soldier so you can teach him the task?

GEN. TRUDEAU: I am very glad to say that there is. From the time the military characteristics are adopted right on through, the question of training manuals, training aids, manual compatibility, test equipment, and now we are trying to develop test equipment that has multiple purposes. In other words, we think testing equipment can be made that will check out a Jupiter and also check out not only a Redstone but let's say a Pershing. There are differences. But by and large, exactly what you are requesting is being done from the time the military characteristics are adopted.

PANEL DISCUSSION

How We Use a MODERN ARMY

MODERATOR

General GEORGE H. DECKER
Vice Chief of Staff, U. S. Army

PANEL

Maj. Gen. WILLIAM P. ENNIS, Jr.
Commandant, U. S. Army War College

Maj. Gen. HUGH P. HARRIS
Chief, Operations, Plans & Training, U. S. Continental Army Command

Brig. Gen. FREDERICK O. HARTEL
Office of the Assistant Secretary of Defense for International Security Affairs

Col. G. A. LINCOLN
Professor, U. S. Military Academy

Because of space limitations it was necessary to condense this discussion.

I feel honored and privileged to be with you today and to participate in this fifth annual meeting of the Association of the United States Army. I welcome this opportunity to speak to you briefly and to serve as moderator for this panel discussion on "How We Use A Modern Army."

Before beginning our discussion, the members of the panel would like to outline briefly the parameters of our subject, and mention some of the major areas which are significant in their consideration. As our lead-off man, I'd like to call on Colonel Lincoln to comment on the Army's role in helping achieve our national objectives.

COL. LINCOLN: The Army, as part of the Defense team, has two principal roles in support of our national objectives and policies. First, to contribute to our tri-service efforts to prevent war. Secondly, if deterrence fails, to provide the major land forces necessary to fight the war to a successful conclusion. Because of our global mutual security arrangements, our military forces would necessarily operate in close conjunction with allied forces in either role.

The role of the Army in contributing to the deterrence of war is a relatively new one in our history. It has evolved along with the heavy burden of Free World leadership which has fallen increasingly on the United States since the end of World War II. The Army's role as a part of the deterrent force has been overshadowed in a national defense policy placing primary reliance on a strategy of massive retaliation. The need for an adequate nuclear retaliatory force is not questioned but events of the past decade indicate that our nuclear capability does not provide the answer to many of the problems which have confronted the U. S. in various parts of the world.

GEN. DECKER: Thank you, Colonel Lincoln. You have provided perspective for our subject and have touched on areas which I am sure will provoke many questions in the discussion to follow.

Now, in its role as an element of the deterrent force, the Army must perform many tasks. It must provide forces overseas in critical strategic areas.

It must maintain mobile, combat-ready forces in strategic reserve in the United States capable of rapid reinforcement of threatened areas overseas.

It must provide forces required for the defense of the United States and Canada against air attack.

It must maintain a base for rapid mobilization, including strong, ready civilian components forces.

The Army also has the very important function of equipping and training the armies of our Allies in some 42 countries around the world. This, in turn, enhances the aggregate deterrent strength of the Free World to the extent of some 200 divisions or equivalents. General Hartel, this is a subject that falls within your bailiwick. Would you say a few words on how the Army participates in the Military Aid Program.

GEN. HARTEL: Many of our own American people are not aware of the positive contribution that is being made by the Military Assistance Program in promoting foreign policy, national security, and the general welfare of the United States. There are roughly 7,900 U. S. military personnel engaged in this program worldwide, of which the Army furnishes over 5,000 specially trained officers and enlisted men in the MAAGs and Missions. When you realize that the percentage of officers to enlisted men in this organization is roughly one to one, you begin to appreciate the importance of this Army mission, and the cost to the Army in critically short supervisory personnel. These five thousand Army Ambassadors represent a tremendous saving dollar-wise in the light of the resulting contribution in fighting divisions mentioned earlier by General Decker. With the destructive type weapons and the

delivery systems available today, it is essential that modern armies are in being on D-Day. The next major conflict would not provide the necessary time to train and equip the Army divisions that would be required, and therefore you might consider our present Army effort in the Military Assistance Program as an advanced and very active mobilization program.

We are most fortunate that in many of the areas where Communists might seek expansion, there are countries which look to us for leadership. These countries have the will to resist, and they have the manpower, but often they lack the required resources. If we do not buttress them with the necessary resources and training, they will succumb to Communism, either through civil disorder and deterioration or through military action. This must not happen. Our Allies provide 80 per cent of the Free World's combined ground forces. Many of these forces are positioned along the perimeters of the Iron and Bamboo Curtains. All contribute substantially to deterring Sino-Soviet aggression. Many of these ground units are in countries which are sources of strategic materials used by us and which are essential to our civilian economy and defense production. Some are helping guard our strategic bases overseas. The protection of these bases and interior lines of communication is vital to our continued existence.

The Military Assistance Program plays a most important role in insuring the survival of the U. S. and the Free World.

Gen. Decker

Gen. Ennis

Gen. Harris

Gen. Hartel

Col. Lincoln

GEN. DECKER: Thank you very much, General Hartel. Having just returned from a rather extensive tour of duty overseas—starting in Europe and finishing up with Eighth Army and United Nations Command in Korea—I would like to mention a very important aspect of the contribution to deterrence by our overseas Army forces who are serving side by side with Allied soldiers. This is the encouragement our soldiers offer to those peoples living under the shadow of the Communist threat along the Iron and Bamboo Curtains. There, our Army units provide positive, visible evidence of U. S. intentions to meet our mutual security obligations. Thus they serve to strengthen the morale and will to resist on the part of those nations who must live under Communist guns.

As I stated previously, the second task of the Army is to maintain strategic reserves which can be moved rapidly worldwide. General Harris, we would appreciate hearing from you on this particular subject.

GEN. HARRIS: By our mobile strategic Army reserves—such as the Strategic Army Corps—the Army provides a means for prompt reaction to the threat of aggression or overthrow of friendly but weak nations by the Sino-Soviet bloc, when such nations are unable to defend themselves without help. By prompt action on the part of our Army forces, supported by our sister Services, the outbreak of open military action can be held in check, or prevented from expanding into a situation which might trigger a general nuclear war. By the nature of Army capabilities, when our forces are called upon for such purposes they can bring to bear a wide range of flexible and versatile power which can be applied with discrimination. This is of especial importance when it is necessary to limit the degree of destruction which could be inflicted on friendly homelands we may be fighting to save. The availability of such forces has a significant deterrent effect.

The Army accepts fully that the principal deterrent to general nuclear war is strong nuclear retaliatory forces that can react effectively, even after enemy surprise attack. The defense of our counteroffensive force in the Continental U. S., as well as of our industrial and population centers, is an important element of our general war deterrent strength. Together with the Navy, Air Force, and our Canadian Allies, our Army air defense units make a vital contribution in this area.

Finally, backing up the deterrent contribution of the Active Army is the indispensable reserve strength represented by the Army National Guard and Army Reserve. These civilian components, as well as the other vital elements of our mobilization base, are now at the highest level of training and readiness in our history. They certainly must be included in the calculations of any potential aggressor against our national security.

GEN. DECKER: I'd like to echo General Harris' remarks on the high importance of our civilian components who provide our Army forces with solid defense in depth. Thank you, General Harris.

Turning now from these considerations of the Army's war-deterrent role to its role in possible future warfare,

it seems to me that our discussion must be governed by several basic assumptions. First, we are approaching relative nuclear parity between the Free World and the Communist blocs which may cause situations short of general war to be more likely to occur. This would appear to be a result of the mutual recognition of the global scale of devastation which general war could inflict on friend and foe alike, from which there could be little prospects of what might be called a victory for either side. I think that this assumption can be further supported by the wide range of the other forms of military power maintained by the Sino-Soviet coalition such as their massive modernized armies and large tactical air forces, naval forces, and long-range bombers.

Another important assumption would seem to be that, in situations short of general nuclear war, nuclear weapons may or may not be used tactically. The validity of this assumption will, of course, be dependent upon many influencing military and political factors applicable in a specific situation. But it seems clear that whenever Army forces are committed to action in the future the threat of the introduction of nuclear weapons to the battlefield will be present in practically all cases. The effect of this latter assumption is to impose on the Army the unquestionable requirement for a dual capability.

General Ennis, I know that you and your people at the Army War College have been doing a great deal of thinking concerning the nature of future warfare and what the Army should be doing to fulfill its roles and missions in such warfare. Suppose you take up from here.

GEN. ENNIS: Army forces will probably have to contend with numerically superior enemy ground forces, at least in the initial stages of combat. This and other considerations impose significant requirements not only for a flexible range of both non-atomic and atomic firepower, but also for new means of tactical mobility, communications and control, all-weather battlefield surveillance, and target acquisition. These must be supported by a highly responsive, streamlined logistics system. All of these means are vital to the combat use of a Modern Army under the conditions visualized for the future battlefield.

The evolution of the strategic and tactical doctrine and organization of the Army throughout the years has been very closely related to the technological developments as they have been adapted to warlike purposes, and the influence these developments have brought to bear on the battlefield. Today, the stepped-up pace of technology requires that we keep our organizational and tactical concepts for the use of a Modern Army under continuous review. This is essential so that we can anticipate the problems as well as the benefits which new weapons and equipment may give us. Otherwise, we could fall short of the qualitative superiority required for the Modern Army relative to the enemies it might have to face.

As the power and range of weapons increase, tactical formations and the manner in which they are employed must change accordingly. In the past, the evolution of automatic weapons, massed artillery fires, and the capability to drop large quantities of explosives from the air, caused much greater dispersion of land forces. Thus, the requirements for tactical mobility and the problems of command and control were increased. For the future, the extension of this trend forecasts further evolution in the equipment, organization, and doctrine for the use of a Modern Army.

GEN. DECKER: Thank you very much, General Ennis. Future war and the problems it would entail for our Army are subjects which I know challenge the imagination of all of us here.

Like most soldiers, I have given the subject of future war considerable thought. The salient problem of the commander of the future—as I see it—will be to find and destroy enemy forces, while rapidly maneuvering or disposing his own troops so as to offer as little as possible in the way of a profitable target since it seems reasonably certain that once atomic weapons are introduced to the battlefield a target found will be a target destroyed. If you will accept this premise then it would seem that the profile of a Modern Army should be based on these considerations. First, it should be equipped so that it is able to locate and destroy enemy targets promptly with either conventional or atomic firepower as appropriate. Next, it should have tactical ground and air mobility to enable it quickly to concentrate at a decisive point or to disperse equally rapidly. Third, it should have the communications necessary to enable the commander to control widely dispersed and rapidly maneuvering formations. Fourth, its logistical system must be capable of delivering and maintaining all of the many items required on the modern battlefield without offering a lucrative target to the enemy. And finally, it must be capable of moving in to the enemy's homeland, restoring order and controlling the civilian population.

While these objectives are generally recognized, there are, I am sure, wide areas of disagreement as to how they can best be attained. Therefore, if our panel discussion can serve more closely to define these areas where differences of opinion may exist and open up some new avenues of approach to their resolution, I am sure a major contribution will have been made to the Army and its Association.

Now, gentlemen, let's get the ball rolling with some questions.

QUESTION: Before we get into how to use a modern army, shouldn't we ask ourselves when is an army modern? I would like to ask the panel's definition of a modern army.

GEN. DECKER: I would like to ask General Harris to give us his views.

GEN. HARRIS: If I had to give a definition that has in it all the elements, I think I would say that a modern army —and I am talking about an army in the field—would be an up-to-date force organized to use the best available equipment that the R&D and our industry can produce, and, I would add, that our people can buy.

I would say it must be trained to do its job and still live on an atomic battlefield.

Finally, I would say that a modern army must be one that can accomplish its mission despite action or reaction of its most capable probable enemy. I may have left out some essential elements, but I believe that would be my general answer.

GEN. HARTEL: I believe that in this modern army we must consider the capability of our allies. We cannot go it alone, and we must depend upon our allies to assist us throughout the world. Our modern army must be willing to pay the price in trained officers and enlisted personnel that are required to train our allies.

GEN. DECKER: From my experience with the military assistance program over the last three years I would certainly say that our defense is greatly enhanced by the indigenous armies that we train and equip—and at much less expense than it costs us to maintain equivalent combat strength in U. S. units.

COL. LINCOLN: Maybe we are having a little difficulty with the term, but to me the term "modern army" starts with the Commander in Chief.

It goes through the secretariat level, the Chief of Staff, and the Vice Chief of Staff, through all components that make up this great dynamic institution that is the Army, including going out through the reserve organizations and the ROTC.

When we speak of modernity we should think within this format, as well as in the more narrow concept of the fighting Army.

I disagree with my colleague, General Harris, on this. I hope that we can set the discussion in a format that will include an appreciation by the leadership of the Army and on down the ranks, of the kind of world we live in today, and the relationships that are ours as units and as individuals.

The pause that refreshes a Modern Secretary of the Army

QUESTION: The thing that bothers me is I think we are failing to consider the capability of our enemy.

I think an army is modern when it has the capability to clobber the enemy. Today we definitely do not have that capability. The Russians have 175 divisions ready to go; 300 divisions that can be mobilized in about 30 days. I look around me and I go up to Fort Riley and see my old 1st Division friends out there quite a bit under strength.

I left Europe recently. I had an outfit over there, and I seldom got over 85 per cent strength. I looked out in front of me and saw that we were going to be out-numbered a little bit. The same thing applied during the Korean war. I think it is about time we learned our lesson.

The Russians have generated a completely new family of weapons. I read occasionally that we are doing the same thing. Yet when I want to show my cadets or the National Guard in Nebraska an M14 rifle, I can't even get a plastic model.

I use a movie camera to show them a picture of it. This is not good. I think our Army will be modern when we gain the force and the equipment that can handle the enemies that might be in contention. And we won't be modern until we get into that position.

QUESTION: Most of the comments made up to this moment seem to be pointed at the initiation of wars, and not the conclusion of them. It always seemed to me that one of the requirements of the Army was to defend the homeland against whoever shall attack us. It would seem to me that one of the things that we would have to do is to live through this initial phase of the war and be so arranged in our mobilization requirement that we could defend our homeland against whoever might attack us. Are these things being considered now? Are we training our people for defense of our own homeland under nuclear conditions?

GEN. DECKER: General Harris, would you care to undertake an answer to that one?

GEN. HARRIS: You are speaking about the mobilization procedures and programs?

QUESTION: That is right.

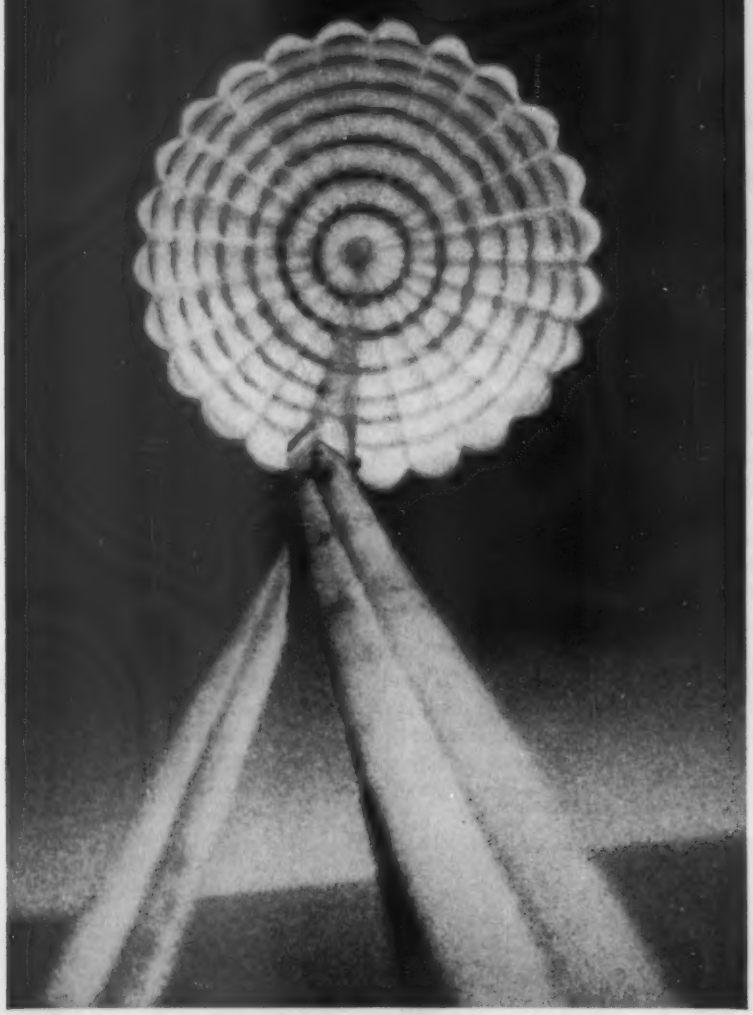
GEN. HARRIS: CONARC has been delegated the responsibility for mobilizing forces in the event of war. We have complete mobilization plans. Whether or not we can implement those plans would depend on many factors, including perhaps the amount of destruction that might be created.

We believe we might have to build into our mobilization plans great flexibility so if certain units that we might have intended to call up can't be called because of the need for local assistance in their locality, we could call up other units. We believe it is very important in our mobilization planning that we keep up-to-date information on all units that might be called under stress.

I would just like to say that our mobilization planning is being done on the basis that we can carry out our mission by some procedure.

1. NASA flight plans call for ICBM-launching. The manned Mercury capsule will reach orbital velocity at about 120 miles, separate from the missile and ride horizontally in orbit.
2. Hurtling at 18,000 mph, the capsule will circle the earth in 90 minutes. Going into its re-entry phase, the capsule will be rotated by attitude controls to come "home" bottom down.
3. A drogue parachute will be deployed at 70,000 feet, decelerate the capsule and stabilize it. The final descent chute will be deployed at 10,000 feet preparatory for surface landing. Just prior to landing, pneumatic bags stored in the rim of the capsule will inflate to assure stability if landing is in water.

...NEWS IS HAPPENING AT NORTHROP



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QUESTION: Could I add one more question? Nuclear attack of course brings with it radiation, and with radiation you run into a period of immobility, and without shelter you cannot keep your people living. In your mobilization of your reserves and your National Guard, and even of your Selective Service, are provisions being made to see to it that these units can live through this critical period at the beginning of a nuclear war?

GEN. HARRIS: I would not like to leave the impression that everything is being done perhaps that we would like to see done, but I would like to say this: the fallout patterns and studies with respect to probable damage to our Army Reserve and National Guard have been pretty well studied, giving factors to the strength of the units, and reasons why you might want to call them up. The matter of fallout has been a factor in the consideration.

We are not satisfied at all with the fallout problem. We are not sure that we have all the intensity studies that we ought to make. But the matter of damage by fallout is included as a part of the flexibility in the program.

GEN. DECKER: As I understand the questions, they are basically what happens after the initial exchange of nuclear weapons. That is a subject on which there are widely divergent views. One is that the war will only last a few days. I don't believe that is the Army view of it. The Army feels it is going to last much longer than that. Someone has to go in and clean up the debris. Perhaps General Ennis would like to indicate what thought the War College has been giving to that particular subject.

GEN. ENNIS: I think our reaction at the War College has been that those forces which will not be required to meet mobilization, and would not have been too badly hurt themselves, will be used to assist in cleaning up the debris.

QUESTION: This may sound a trifle old-fashioned in talking about the modern army. I wonder, in the event this modern Army has to fight without nuclear weapons, how the panel would visualize that the operations would vary from those we knew in World War II and in Korea.

GEN. DECKER: That is a very interesting question. I believe it is a subject that has been given considerable attention at the Army War College. General Ennis, would you like to answer that one?

GEN. ENNIS: I think we had better start out with the premise that a non-nuclear, or, should we call it, a "conventional" war, today would be a great deal similar to World War II or the Korean war, with one big difference. That difference will be, under present conditions and as far into the future as we can see, the always overhanging threat of the use of nuclear force by opposing forces, and probably at times the feeling of a commander of friendly forces that to save himself he must use them.

The problem resolves itself, from the commander's view, with the fact that with this threat of nuclear force on his troops he must disperse as much as possible, and his problem then becomes how much is possible without being so far apart that units are no longer self-supporting.

The organization and equipment which we now have permits us to disperse considerably more than we did during the Korean war or during World War II.

We have greater mobility, and we have much better communications. So I think I had best close this by saying that we are capable of fighting a conventional war at this time, but we must keep in mind continually the over-all threat of the enemy's use of nuclear weapons. This makes the commander's job very difficult.

QUESTION: The role of the Army has been stated in many ways over the past few years. Mainly it stresses the seizure, occupation and defense of land areas.

Now that we are moving into something of a missile era and an era in which we will probably move into space, could you discuss the role of the Army in this particular field?

GEN. DECKER: Are there any volunteers? Apparently these are all ground soldiers.

COL. LINCOLN: I will make a foot man's comment, partly seriously. First, on space operations, the statement has been made before, that we should be mighty sure we are solving the problems of inner space before we put too many resources into outer space.

I will now give you my personal view on the use of missiles. The compartmentation between services has got to and will disintegrate more and more in the next ten to 20 years.

Perhaps ten years from now we won't have quite so much trouble about who shoots the missiles. At one time, I recall, there was quite an argument over whether the infantry should be permitted to have what we call artillery. But they got there just the same.

GEN. HARTEL: I will take a crack at that. I think that it is not going to change the Army's role in so far as the way we are going to operate. We will just have to get new types of missions to defend land areas against attack from space ships. This is something that we have not developed as yet. However, the Army is thinking about it, and doing some planning.

GEN. HARRIS: I think General Lemnitzer in his talk yesterday defined some additional uses. He was interested in communications, reconnaissance, related functions that space vehicles can provide in support of sustained land combat.

GEN. DECKER: The Army has a definite interest in space. I think at the present time it is to discover what uses can be made of it. I think the question is still not clearly answered, or only partially answered. At the present time we are very much in an experimental stage.

QUESTION: Since 1946 I have been overseas in Europe and the Pacific and three years in the States. Everywhere we go, it seems to me, the Army is faced with this communist threat which is insidious. It does not come out in the open with the troops. But we are fighting this war right now. Whether or not we are going to fight a nuclear war will depend on whether or not we win the one we are in now. I

Sikorsky S-60 —giant new flying crane

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wonder if the modern army we have today is prepared to fight the kind of war we are already in.

GEN. HARRIS: I think that our army does provide the diplomatic side a certain amount of manpower to back up the diplomats in the so-called cold war. I would subscribe to the premise that we are not in any identifiable type of war, other than what we normally call a cold war.

COL. LINCOLN: I would like to make one comment on this, which is that in my personal observation the Army has come an awfully long way, say in the last ten years, in the matter of doing the job of representing America abroad.

I would suggest to you that wars, other than general war, have now become much more political than they were. We should recognize that active military force is always a blunt instrument but that the Army is the least blunt of the types of military force that we have and therefore is most likely to be capable of being able to avoid an expansion of the conflict into general war.

GEN. HARTEL: I believe that the question directs itself more or less to non-military warfare, because if there is a military war going on in which we are involved now I do not know about it. I think we are doing a great deal about this non-military warfare.

I refer to our efforts in the line of teaching the outstanding individuals of a great many of the underdeveloped countries. Since 1950 we have conducted 147,000 courses of instruction which cross the spectrum of education from technical skills to the military skills.

I understand that just recently 80 of the outstanding officers from 46 nations graduated from our course at Leavenworth. In this way we are developing skills, and the kind of leadership we would like to see exercised in the world. We are developing good will toward the United States.

Of these 147,000 courses, some 116,000 were conducted in schools in the United States. That means that these officers from other countries who lived in the United States and were associated with us for several months or a year or so, are bound to go home with a better understanding of our way of life. In this way we are building up a barrier against the spread of communism. And that, after all, is the goal of nonmilitary warfare.

GEN. DECKER: It seems to me that most of the losses we suffered were incurred before we actually understood the situation. Since the Korean war, it seems to me, we have been able to hold our own. So far we have not lost whatever kind of war you want to call it. We are holding our own at least.

QUESTION: I would like to direct this question to General Harris very pointedly: What agency exists today which fills this gap which determines how, looking toward the future, these new weapons will have their application to the tactical concepts of battle and the employment and organization of our troops?

GEN. HARRIS: The combat developments system in the Army has a broad base, starting with the combat schools and coming up through our various military installations. The Combat Development Experimentation Center (CDEC) is the latest element of combat development that has been placed in the Army.

We hope by use of this to test tactical formations and the best combinations of firepower, maneuver and logistical support. The void in application or testing of our tactical concepts we hope will be filled by CDEC as it exists, or an extension of it. But now the capability exists only for testing small units. There may, however, be an opportunity to test larger units at the proper time.

QUESTION: I have the impression that the commander in the field today must disperse because the enemy might use nuclear weapons, but he himself is going to be held back until the enemy does use nuclear weapons.

We don't hesitate to take a machine gun and increase the rate of fire if we can do it. We don't hesitate to take an artillery shell and fire it an additional five miles if we can do it. Therefore, why not give the army commander the same nuclear capability which will increase his firepower without worrying about whether or not he uses it?

GEN. DECKER: I will attempt to answer that one myself since I have for the past two years been in a situation similar to the one you describe.

It is a policy decision that has to be made by the President, of course, as to whether or not we use nuclear weapons. The commanders in the field are bound by that policy. Obviously there is a possibility that they may be used by the enemy. There is a possibility that he may get authority to use them. So the commander in the field has to be able to jump either way.

He has to be prepared to fight a conventional war, he has to be prepared to defend his troops against atomic attack, and he has to, if he gets the authority, be prepared to utilize the atomic weapons that are available to him.

Those are decisions which can't be made by the commander in the field but at the highest levels of Government.

QUESTION: I have an academic question for General Ennis on the same subject. I was talking to an Allied visitor here. He was thoroughly disgusted by our morality in the case of a nuclear battlefield, with the decision to go nuclear.

We create the image of a battlefield in which we have a group of good guys completely dispersed, facing a group of bads, completely massed and coming at us. This visitor mentioned this fact: We have very clearly and definitely told our potential enemies that we will not be the first to go nuclear. The question he and I want to have answered is how will we do it? Will the diplomats go all the way down to the field commander?

GEN. ENNIS: I am not sure that I fully understand your question. I would like to repeat it and see if I am correct. You want to know, I believe, whether we are capable of making this decision of whether or not we use the nuclear weapon, is that right?

QUESTION: Yes, sir. I probably asked for information that is not available to us. But if the diplomat is going to be

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concerned with the commander making this decision, how far down the line can it be made? Who can make the decision to go nuclear, when the enemy knows we will not be the first to go nuclear.

GEN. ENNIS: I am not sure I can answer your question. I think it depends on the situation. I am sure you are acquainted with the fact that the only person who can make such decision at the present time is the President.

QUESTION: It seems to me that if we should surrender the initiative to an enemy who has the ability to go atomic, it will be very difficult for a commander to use conventional weapons himself. He is always exposed to the possibility of atomic attack. Will this have any effect on our training?

GEN. HARRIS: I think that what we are saying in effect is that in our doctrine, our operational doctrine, we are trying to prepare our army to fight successfully under every condition.

We don't believe that you can create an atomic capability after something happens, and we feel that the threat is sufficient to cause us to have a dual capacity.

The decision as to using these weapons will come down through command channels. This matter of dispersion versus the enemy dispersion will always create fear in the commander's mind. He will have to face up each time he has a military operation in mind, to the question of whether he is taking an unacceptable risk. I think the commander will always have fear of criticism by non-military people in our Government. And he may be fearful of criticism by his Allies who don't know the instructions which he might have.

So I really think that it is essential to us that we provide our army with the best equipment for both. I don't think they are necessarily contradictory. I think that some of the equipment can be used under both conditions. But I certainly think that it would be the height of folly not to have an atomic capability or to try to straddle and have one only. I don't believe that I can answer your question any better than that.

General Lawton, Army Comptroller, watches the efforts of a visitor to beat the unbeatable electronic-controlled pool balls

GEN. DECKER: I think there is a certain incompatibility between the requirements of fighting atomic war and fighting what you might call a conventional war. You may be deployed adequately for conventional engagements. If you were attacked with atomic weapons you could provide a target which is a lucrative one for the enemy.

On the other hand, you may be dispersed to fight an atomic war and you may be subject to all kinds of infiltration because of your wide dispersion and deployment.

There is a certain incompatibility in equipment, too. If we are organized with weapons which are capable of firing atomic shells but not conventional ones, then we have to sacrifice some of the conventional capability. So there is a certain conflict of interest which would make it very difficult for a commander in the field to be prepared to fight either kind of a war.

The lack of firm decision as to whether or not he will be allowed to use atomic weapons is one of the complicated factors involved.

QUESTION: It has been discussed that the next war might be fought on our own homeland. That being the case, I wonder are we prepared, as far as the weapons that we have in some of our defensive positions.

Some of our more strategic spots throughout the country are very poorly defended, and there are weapons in our arsenal that could replace the ones that we have there. Yet they have not been put there. I wonder could anyone give me an answer as to why we have a slingshot-type weapon defending something when we should have a shotgun type weapon?

GEN. HARRIS: I think it is primarily in the logistical field and the money field. I know of no instance where we are holding better equipment in any depot than we have in the hands of troops. I don't know specifically of the case you are talking about. But I know that we are planning, for instance, to use the Hawk, which is a fine missile, and we have no intention of putting it in the depot. We are going to put it in the hands of the troops.

Furthermore we are going to place those units where they can augment the air defense of the United States. I really believe that question could probably better be answered by the logistical panel.

GEN. DECKER: I think there is a logistical panel meeting tomorrow that can answer any of those questions better than this particular panel.

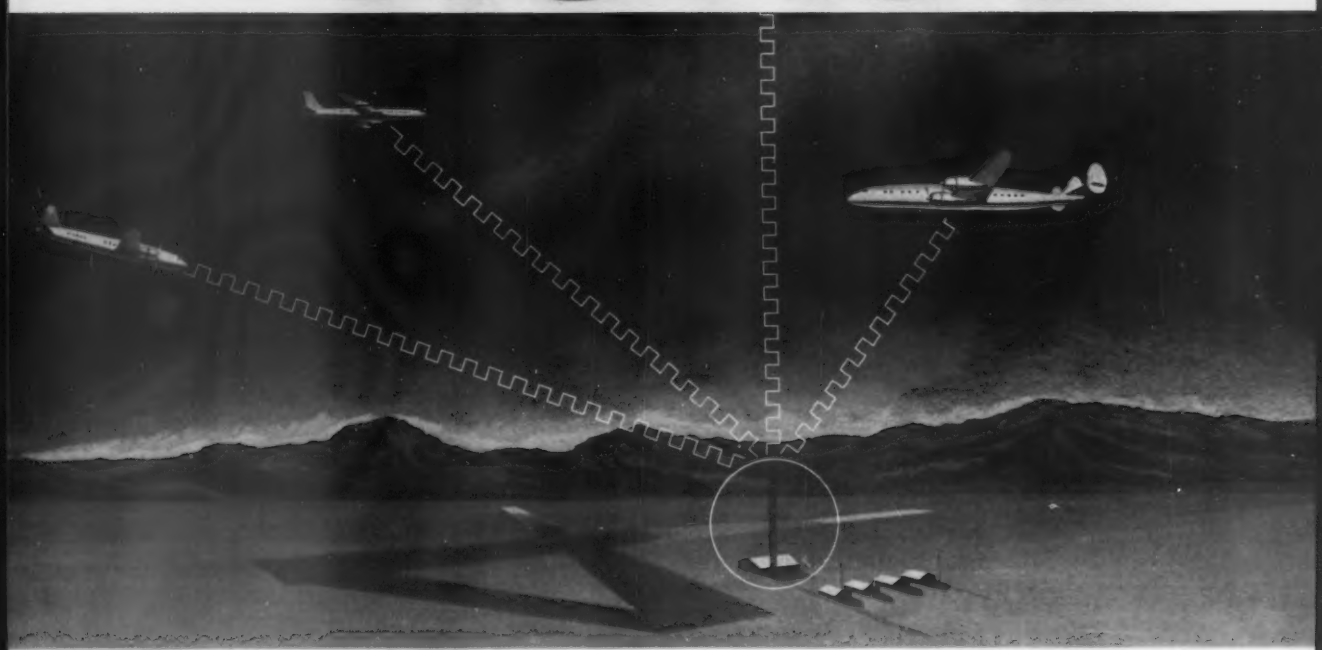
Briefly to summarize what we have tried to say here today, it is basically a definition of what is a modern army, how it can be best used to promote U. S. objectives, and how its use in the future will differ from its use in the past.

I am sure that we haven't given you adequate answers to questions that are inherent in those considerations. But I am sure that you appreciate that this panel is only an Army panel and doesn't have over-all cognizance of the many basic issues involved, and is trying to give you its best judgment based on not only Army doctrines and policy but also the personal opinions of the members of the panel.

new wings for words

AGACS

pronounced "AJAX"



AGACS, Experimental Automatic Ground/Air/Ground Communication System is a new concept in Air Traffic Control Communications to meet the accelerated pace of increased air traffic. Primary objectives are efficient usage of frequency spectrum, added safety through increased reliability and reduced burden to pilot and controller, and adaptability to all classes of aircraft. AGACS provides compatibility with existing ground and airborne communication equipment, selective addressing of information, and a minimum number of frequency changes during flight. The system utilizes two-way time division data transfer over existing ground and air communication links to provide an automatic, mutual exchange of information. The airborne facilities display to the pilot the last significant Air/Ground and Ground/Air message quantities, while the controller may recall from central memory-storage equipment the last Air/Ground and Ground/Air message quantities for display. The AGACS program is still in the developmental stage. In August, 1959, RCA provided initial models of both airborne and ground equipments for the Bureau of Research and Development of the Federal Aviation Agency for extensive experimentation and flight tests.

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AUSA's 1959 Resolutions

PREAMBLE

WE, THE MEMBERS OF THE Association of the United States Army, believe that a strong modern Army is the key to national defense of the United States;

We believe that the security of our nation is dependent upon the recognition of a fundamental principle that wars are fought for control of land areas and the people who inhabit them;

We further believe that the combat soldier on the battlefield is a decisive factor to our survival; accordingly he must have the most modern equipment that our great Army-Industry team can produce;

This Association is dedicated to the task of bringing the truth to the American people that there is no easy or quick solution to war and conflict; therefore, a new national strategy should be formulated that takes into account the following vital elements:

(1) The Soviet capability of launching thermonuclear-carrying intercontinental missiles against the United States;

(2) The absence of a program for the early production of the Army Nike-Zeus antimissile missile;

(3) The lack of an effective civil defense program; and the possibility that many millions of Americans would be casualties in the event of a thermonuclear attack on the United States;

(4) The fact that creeping aggression can be deterred only by soldiers capable of waging all forms of combat;

(5) A weak and inadequately equipped Army strengthens the bargaining position of an enemy that has both a thermonuclear capability and a strong army.

Today the presence of highly mobile, modernly equipped and organized armies capable of waging either general or limited wars with conventional weapons or a combination of conventional weapons and tactical atomic weapons is the only realistic response to the threat of aggression.

This Association further pledges itself to continue to work for the best interests of those dedicated men and women in our Army, and specifically to advance these programs adopted by our membership in preceding annual meetings:

(1) The adoption of career incentives for officers and enlisted men and women to increase the effectiveness of the Army, and improve the morale and esprit of the members of the Army and their families. These include actions relating to:

Troop and family housing
Medical and dental care of dependents
High standards of service at reasonable

AUSA's 1959 Resolutions Committee at Work. Clockwise around the table: Mr. Ralph L. Coover, Fort Riley-Central Kansas Chapter; Mr. W. Lester Youngblood, Third Army area; Mr. Maxwell N. Brown, Bogardus S. Cairns Chapter; Brig. Gen. William J. Sutton, USAR, Chairman and representing Alamo Chapter; Maj. Gen. H. G. Maddox, USA, Ret., Second Army area; Col. E. W. Howe, USA, Ret., Fourth Army area; Mr. Chester R. Davis, Fifth Army area; Col. Walter Kraus, USA, Ret., Monterey Tri-County Chapter; Mr. K. E. Yocum, William Penn Chapter; Lt. Col. Jack D. Anderson, USAR, Gen. John J. Pershing Chapter. Mr. D. Gordon Hunter, First Army area, and Mr. Frank H. Higgins, Sixth Army area, not present when this photo was taken, were also members of the committee.

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Brig. Gen. William J. Sutton, Chairman of AUSA's Resolution Committee, presents resolutions to the membership.

cost in commissaries, laundries and post exchanges

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Concurrent travel of heads of families and their dependents to overseas stations

(2) To continue efforts to increase the number and quality of young men applying for appointment to the United States Military Academy.

Finally, this Association will continue to support all efforts to strengthen the ability of the U. S. Army to speak with a unified voice on vital issues. We encourage and invite all groups that have as their goal "The well-being of the U. S. Army" to join with us in a common cause. We firmly believe that such unity will give us great strength.

No. 1. MAINTENANCE OF A STRONG ARMY

WHEREAS, there is a continued threat to world peace which endangers the security and peace of this country; and

WHEREAS, the Soviet Union and Communist-dominated countries have made vast improvement in their overall military posture and their preponderant strength is in their modernized Army forces; and

WHEREAS, our massive retaliatory potential has not deterred the pattern of small wars and limited aggression which can only be met with ground forces; and

WHEREAS, the defense of the United States is dependent on the active Army and the citizen soldier of the United States Army Reserve and the Army National Guard; and

WHEREAS, there is not now sufficient personnel to man all elements of existing authorized units to fulfill the Army's responsibilities in accordance with announced roles and missions, with world-wide commitments, maintenance of an effective strategic reserve and carry out all other vital assigned missions;

NOW, THEREFORE, BE IT RESOLVED, that the Association of the U. S. Army advocate an active army of not less than 1,000,000; a paid drill strength of not less than 300,000 in the U. S. Army Reserve and 400,000 in the Army National Guard, both exclusive of all six-month trainees; the necessary supporting civilian employees and funds for forces of this size.

No. 2. MODERNIZATION OF THE ARMY

WHEREAS, a high percentage of the weapons and equipment currently available to and utilized by the United States Army is outmoded; and

WHEREAS, it is not the desire of any citizen that an American soldier be forced into combat with inferior weapons and equipment; and

WHEREAS, our Army must be prepared to resist attack or to fight any type of warfare ranging from brush-fire to major engagement;

NOW, THEREFORE, BE IT RESOLVED, that the United States Army be provided with modernized weapons and equipment at a rate and to an extent which will assure the United States a fighting force, properly armed and equipped for any type of modern warfare.

No. 3. ARMY MISSILE EMPLOYMENT

WHEREAS, the restrictions on the range of Army ballistic missile systems restricts the flexibility and full utilization of the weapons; and

WHEREAS, the United States Army has demonstrated a superb capability for developing and deploying operational ballistic missile systems in minimum time and at minimum cost;

NOW, THEREFORE, BE IT RESOLVED, that the Association of the United States Army respectfully recommends that the Secretary of Defense remove the present range limitations on the Army's use of ballistic missile systems so as to give Army field commanders flexible weapons

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Although the space-taxi is still a gleam in an engineer's eye, the controllable rocket engine is available now...and has immediate application for existing aircraft. The pilot of a plane with auxiliary rocket power can switch it on for sudden, swift acceleration at high altitudes . . . the aircraft's air-breathing turbojets supplying power for ordinary flight operations. This is the mixed-power theory. Since World War II several mixed-power concepts have been developed in foreign countries, including Russia, France and England.

Extra power for today's aircraft

Rocketdyne already has designed, tested, and manufactured rocket engines for mixed power applications. The AR-1 rocket engine is a liquid-propellant system, as are the large power plants for the Atlas, Thor, Jupiter, and Redstone ballistic missiles. The AR-1 passed stringent flight tests as a supplementary power plant on modern jet aircraft. Substantial improvements over normal near-sonic speed and 50,000-foot altitude capabilities were demonstrated in more than 100 test flights.

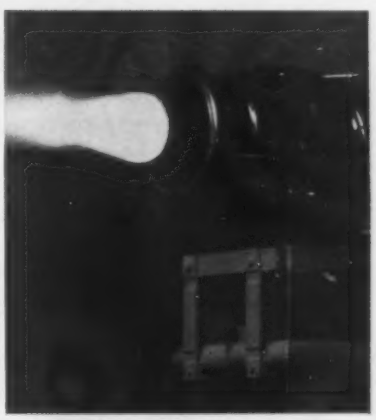
The AR-2, second in a series of four rocket-engine models developed by Rocketdyne, is a fully-throttleable engine that provides varied thrust. Using fuel from the airplane's tanks—which automatically ignites with hydrogen peroxide—these engines have full stop and restart capability.

More value for taxpayers' money

The auxiliary rocket engine gives present aircraft superperformance capabilities at a relatively low cost. It provides the increased speed and maneuverability that could spell the difference between the success or failure of an intercept mission. Almost any existing jet aircraft, as well as those now on the drawing board, can be adapted readily for AR engines.

Looking forward to tomorrow

Beyond a doubt, rocket power has a leading role in the Free World's future. Rocket-propelled airplanes, such as the X-15, will pave the way for man's entry into Outer Space. The multi-million-pound-thrust systems that are now under development at Rocketdyne will be man's means to explore interplanetary Space. But meanwhile, these rapid advances in rocketry can add great strength to America's present deterrent arsenal.



THE MEASURE OF ROCKET POWER

The liquid-propellant AR rocket engines are "static tested" at Rocketdyne's field laboratory to measure thrust and performance.

FIRST WITH POWER FOR OUTER SPACE

ROCKETDYNE

A DIVISION OF NORTH AMERICAN AVIATION, INC.

capable of successfully accomplishing the Army's combat missions.

No. 4. ARMY AIR DEFENSE SYSTEM

WHEREAS, adequate defense against manned aircraft attack systems continues to be necessary to national security; and

WHEREAS, defense against enemy ballistic missile attack on the United States is vital to this nation; and

WHEREAS, the United States Army has demonstrated foresight and has rapidly progressed in the development of the Nike Zeus, the only known ballistic missile defense system potentially capable of countering an enemy missile attack;

NOW, THEREFORE, BE IT RESOLVED, that the Association of the U. S. Army recommends the continued installation, operation and development of the Nike missile air defense system by the U. S. Army; and

BE IT FURTHER RESOLVED, that the Association of the United States Army recommends that the Army be authorized to proceed with all possible speed in the development, perfection, and production of the Nike Zeus missile system so critical to this country's security.

No. 5. AIRLIFT FOR THE ARMY

WHEREAS, the Strategic Army Corps has a unique capability to deal with the challenge of limited war by bringing to bear its trained manpower and graduated firepower; and

WHEREAS, promptness of reaction is a primary requirement for coping with limited war; and

WHEREAS, prompt action by the Strategic Army Corps is inhibited by the lack of strategic airlift to transport Army combat elements from the United States to an area of threat or action with sufficient rapidity and to support such a force by air until surface transportation can take over the task of supply; and

WHEREAS, this dearth of adequate airlift to move and support the Strategic Army Corps is crippling to the Nation's ability to respond promptly and forcefully to a threatened or actual limited war situation;

NOW, THEREFORE, BE IT RESOLVED, that the U. S. Army must be provided with sufficient transport aircraft on top priority to permit the movement of at least one-half of the Strategic Army Corps and full logistical support thereof.

No. 6. REMOVAL OF WEIGHT AND RANGE LIMITATIONS ON ARMY AIRCRAFT

WHEREAS, Army Aviation offers a tremendous potential in mobility and firepower so essential in successful ground combat; and

WHEREAS, there exists an urgent need for full development and exploitation of highly versatile aircraft for use within the Army's area of responsibility on the battlefields of the future; and

WHEREAS, the development of such aircraft which can live, work and hide on the modern battlefield in its multiple role of transport, command, communications surveillance, and weapons platform does not duplicate or conflict with the Air Force; and

WHEREAS, certain weight and range restrictions deny the Army the full exploitation, research and use of aircraft which will vastly improve its capability to carry out its mission; and

WHEREAS, no service should be denied the equipment it needs to further the accomplishments of its mission; and

WHEREAS, the depth of the battlefield in modern warfare is such that present weight and range limitations on aircraft prevent the Army from attaining its full effectiveness;

NOW, THEREFORE, BE IT RESOLVED, that the weight and range limitations on Army aircraft be lifted so as to permit exploitation of its versatility and mobility to the full advantage of its capabilities in support of the Army's role.

No. 7. REVITALIZED ARMY ROTC PROGRAM

WHEREAS, the major source of officers for all components of the Army is from the Reserve Officers Training Corps; and

WHEREAS, the ROTC program is vital to the continued availability of high caliber officers to provide for the qualitative leadership requirements of the Army; and

WHEREAS, the training under the ROTC program in high schools and colleges is essential to National Defense and also contributes greatly to our National Welfare and to our young men in the development of leadership, citizenship, and patriotism; and

WHEREAS, the continued effectiveness and value of the ROTC program requires that it be kept aligned with the growing population and consequent economic burden on high schools and colleges;

NOW, THEREFORE, BE IT RESOLVED, that the Association of the United States Army recommends that the Congress and Department of Defense expand and strengthen the high school and college ROTC program and further recommends increased federal funding and manpower support to this program.

ECOLOGY OF LIGHT HELICOPTERS

Bionomics is another word for it — how one of anything gets along in its environment. At Hiller it's the continuous research and engineering for the light utility helicopter that can master any environment. Three traits receive the most attention — payload, durability in the field, and transportability. Though interdependent, Hiller applies to each a maximum in operational studies, economic evaluation and engineering refinement. And not just in the laboratory nor in theory; the operational lifespan of every Hiller helicopter in the field is an experience to improve the line. For future generations of light utility helicopters, Hiller's studies will be far reaching.

Designs are one thing. Deliveries another. Both come from HILLER AIRCRAFT CORPORATION

PALO ALTO, CALIF. / WASHINGTON, D.C.
Adhesive Engineering Division / San Carlos, Calif.

No. 8. ADJUSTMENT OF RETIRED PAY

WHEREAS, Public Law 85-422, approved 20 May 1958, amended the Career Compensation Act of 1949 to provide a general increase in pay for military personnel, but provided an increase in compensation of only six per centum for those persons who were retired prior to the effective date of the act; and

WHEREAS, this Association is cognizant of the expressed interest and concern of the President of the United States in the need for adjustment in the pay of retired personnel; and

WHEREAS, a member of the military service should have a right to consider adequate retired pay as a normal expectancy based upon long and honorable service; and

WHEREAS, many of those who are just beginning their Army careers maintain that as a career incentive the same standard for compensation of retirement pay should be applied to all without regard to date of retirement;

NOW, THEREFORE, BE IT RESOLVED, that the Association of the United States Army support all proposals to equalize the pay of military personnel who retired prior to 1 June 1958 with those retired after that date; and

BE IT FURTHER RESOLVED, that this Association advocate the restoration of the traditional relationship between the pay of active and retired military personnel so that full confidence in the retirement system may be maintained by those now serving in the active service.

No. 9. DUAL COMPENSATION LAWS

WHEREAS, an act of 31 July 1894 prohibits a retired officer of the Regular military service, who receives annual retired compensation of $2,500 or more, from holding federal employment, with the exception of those elected to public office, those appointed to a public office for which Senate confirmation is necessary and those retired for injuries incurred in battle or in the line of duty; and

WHEREAS, an act of 30 June 1932 prohibits certain retired officers from receiving, from federal employment and retired pay, a combined amount in excess of $10,000 per year; and

WHEREAS, the services of many competent persons are lost to the federal government because of these restrictive laws;

NOW, THEREFORE, BE IT RESOLVED, that the Association of the United States Army urges the removal of discriminatory provisions of law pertaining to the employment of retired military personnel by the federal government.

No. 10. BIRTHPLACE OF THE ARMY

WHEREAS, Independence Hall in Philadelphia is the birthplace of the United States Army; and

WHEREAS, the site of the Army's birthplace has not in 184 years been permanently memorialized;

NOW, THEREFORE, BE IT RESOLVED, that this Association recommends that the U. S. Army's birthplace be appropriately memorialized.

No. 11. AUSA REGIONAL ORGANIZATION

WHEREAS, in order to fully and effectively accomplish the aims and objectives of the Association of the United States Army, there exists a need for strength in organization as well as in number; and

WHEREAS, there should be an organizational structure along areas and boundaries which would provide for guidance and growth; and

WHEREAS, the membership would be kept much better informed, and through organized effort be able to more systematically and rapidly work towards its objectives; and

WHEREAS, such an organization would provide for rapid expansion and the establishment of additional Chapters;

NOW, THEREFORE, BE IT RESOLVED, that the Association of the United States Army authorize the establishment of area and state organizations along the boundaries of the six Army Areas, in accordance with plans to be submitted from such Areas to National Headquarters for approval; and

BE IT FURTHER RESOLVED, that area organization would be composed of separate state organizations and that the officers and directors of state organizations be elected from the various chapters therein, and the officers of the area organization be elected from the state organizations; and

BE IT FURTHER RESOLVED, that the state and area organizations require no financial support except a reasonable amount of stationery, postage and the necessary application blanks and membership literature which shall be furnished by National Headquarters.

No. 12. VOTE OF APPRECIATION

RESOLVED, that the delegates to the fifth annual meeting of the Association of the United States Army extend a sincere vote of appreciation to the officers, members of the Council of Trustees, members of the Advisory Board of Directors, and Staff of the National Headquarters for their untiring efforts, devotion, and outstanding leadership.

HALF CUBIC INCH 90 DB AMPLIFIERS FEATURE NEW CERAMIC TRANSFORMERS

New 455 kc three-stage amplifiers developed by the U.S. Army Signal Corps utilizing the facilities and competence of General Electric provide as much as 90 db gain with 5 kc bandwidth in a volume of one-half cubic inch. This degree of miniaturization evolved from sustained research and development in solid state filters, delay lines and transformers at the Electronics Laboratory, Electronics Park.

The unique bar-shaped transformers developed for these amplifiers, combined with improvements in existing ferro-electric ceramics, permits the most compact packaging with extreme gain. This achievement in research and development is indicative of General Electric's technical competence in defense electronics.

227-2

Progress Is Our Most Important Product

GENERAL ELECTRIC

Defense Electronics Division
Heavy Military Electronics Department
Syracuse, New York

The President's Report

Major General
A. J. Drexel Biddle

Again it is my pleasure to report to you a continuing, steady progress by the Association since our last Annual Meeting. Our organization continues to grow in stature and prestige thanks to your efforts and cooperation. Future growth requires further support.

Membership

Since our last Meeting, we have increased our membership to 58,705 as of the end of June. Based on the inventory of 31 December 1958 our membership increased 16.8 per cent in the first half of 1959.

Membership is important to us in two ways. It not only provides financial support for our activities but, more important, strengthens our voice in behalf of our objectives. Hence, proper membership promotion is extremely important.

The Association staff through advertising in the magazine, through letters to individuals, through fact sheets and other materials is making a determined effort to bring our Association to the attention of the many whom we think would be glad to join, if they were invited to do so. This is not a job that can be accomplished successfully by the staff alone. We need the support of every member of the Association if we are going to obtain the membership growth which will increase materially the effectiveness of our Association.

So I ask you as members of the Association to take the opportunity during the coming year to tell at least five of your friends about the Association and what it is trying to do—and to invite them to join. If you will do this, our membership next year should be twice as large as it is now. Helpful information can be obtained from the Association Headquarters or at the information desk in the lobby.

I cannot emphasize too strongly that one of the most important factors to the continuing growth of our Association as an effective spokesman for a strong Army, is our membership growth. I hope all of you will lend a hand.

Membership Fulfillment

The investment in the mechanization of our membership records has paid good dividends during the past year. The rapid growth of our chapter program, the increased membership of the Association, and the mechanization of our accounting records have all added to the work of our Machine Records and Fulfillment Department. This increased workload has been absorbed while we have improved fulfillment services and reduced unit costs. The benefits will be even greater in the future.

Sustaining Membership

When our Association was reorganized in October of 1956, one of the most important early objectives was to establish an industrial membership program through which we could provide improved communication between the Department of Army and Industry. We now have 64 com-

panies as Association members. Each of these companies has 50 associate members.

Since our last Meeting, we have conducted two classified symposiums: one in February at Fort Bliss, Texas, on Guided Missiles and Electronics and one on Mobility and Communications at Fort Bragg, North Carolina in April. Both of these were very well received and provided further opportunities for discussion between leaders of the Army and industry on the problems and programs in these important fields. We are making a study to determine the schedule of symposiums for the coming year.

We continue to make available organizational charts, pamphlets, and brochures, all of which are designed to assist our industrial members in understanding more readily the manner in which the Army does business and to acquaint them with changes in organization and responsibilities. We also provide materials such as our own *Security of the Nation*, the Army's *Contractor's Guide*, the Army's Progress Reports and other information which will increase mutual understanding and benefit National Defense.

In our film service for our industrial members, seven different films are available. To date we have filled 225 requests for the loan of these films and have a backlog of some 30 requests. The showing of these films in the various industrial firms and surrounding communities is bringing various facets of the Army story to a wide audience that otherwise would not have an opportunity to learn of the Army's accomplishments and problems.

We feel that the Sustaining Membership Program is making a real contribution to the accomplishments of the Association.

Regional Program

After almost three years, our Regional Program has progressed from the stage where principal emphasis was placed on organization to the period in which our Chapters are expected to perform the functions for which they were organized—to implement in local communities AUSA programs to attain AUSA objectives.

The Council of Trustees has approved charters for 119 Chapters and 59 ROTC Companies, and revoked charters for seven Chapters and one Company, leaving a net of 112 Chapters and 58 Companies. Chapter charters were revoked either in order to permit mergers of chapters or because the units to which the chapters were accredited were lost in the cutbacks of Army strength or because the chapters were not active, effective units.

AUSA has too much to do, and too little time to do it, to permit wasted efforts on ineffective regional units. Our regional program is expensive, and it is not fair to our membership to spend money on chapters or ROTC companies that do not display sufficient interest and activity.

Since our last Annual Meeting, chapter membership took the lead over the number of members-at-large—over 60 per cent of our members are now coded as Chapter members.

But enough of statistics—you are interested in what the chapters are doing. At National Headquarters we know that about half of our chapters will respond immediately to word from Washington that help is required on an Army project or problem. The overseas chapters can do little in this field, but they do stimulate continuing interest in the Association. The remaining chapters, those that are not as effective, are either new or having interior difficulties. We are monitoring these chapters and attempting to help them.

Without going into details, most of which would take more time than I have available today, you may be assured that AUSA is being heard—and taken seriously—by those in local communities, in news media, in industry and in government. Most of the Senators and Representatives in the Congress know that the Association of the United States Army is intensely interested in National Defense and the Army's legitimate place in that National Defense. The progress made in this direction in less than three years has been tremendous—but we are far from satisfied.

At this point I emphasize once more that AUSA does *not* lobby. It does not propose legislation. It makes its views known on legislation that has been proposed, and informs its members (usually through the chapters) of the effect of proposed legislation. We operate as an educational organization.

Before I leave the subject of our regional program, I would like to pay a tribute to those public-spirited Americans who activate the programs: the Chapter officers. The Army and the Nation are the beneficiaries of the hundreds of thousands of unpaid man-hours, and the tens of thousands of dollars they spend from their own pockets, for the privilege of serving. We are proud of them.

Editorial Activities

ARMY magazine continues to be a publication to inform and to promote discussion on professional military subjects and at the same time to provide non-military readers with information that will broaden their knowledge and understanding of the Army and the men and women who wear its uniform. Its circulation is now over 67,000. During the period covered by this report, articles and editorials were published that explained the principal objectives adopted by the Association at its 1958 meeting.

In accordance with our policy, the increase in the number of pages of paid advertising in the magazine has not resulted in any decrease in the number of pages of editorial matter. As the number and activities of our Chapters and ROTC Companies increase, there has been an increase in the magazine content devoted to reporting these activities.

In addition to producing the magazine, the editorial staff provided the editorial, production and distribution assistance that went into the publication of the revision of *The Security of the Nation* pamphlet and also provided minor editorial and production assistance to other AUSA projects.

In the year ahead, we hope to improve the quality of the professional content of the magazine and give emphasis to the objectives adopted at this meeting. Among other things we hope to provide our readers with a picture of the Army budget and other items of legislation affecting the Army. We believe that such material will give our readers an added insight into national defense problems and provide factual

AUSA Awards

At the luncheon on 4 August General Biddle presented Certificates of Appreciation to three members of AUSA:

To **Maj. Gen. Rinaldo Van Brunt,** "For unremitting support of the Association throughout the Second Army area, including encouragement of the formation of chapters and the acceptance of speaking engagements regardless of personal inconvenience."

To **Col. Earl W. Huntting,** Secretary of East Bay Chapter, "For outstanding personal efforts toward attainment of AUSA objectives, and superior performance as Secretary of East Bay Chapter." (This award was accepted by Mr. N. T. Gage in behalf of Colonel Huntting.)

To **Lt. Col. Jack D. Anderson,** President of General John J. Pershing Chapter, "For outstandingly effective efforts in coordinating AUSA objectives with those of other patriotic organizations in the State of Nebraska."

Two awards were presented at the Banquet on 5 August.

Maxwell N. Brown, Mayor of Enterprise, Alabama, was selected as the person who has done the most for AUSA during the past year, thus earning the President's Gold Medal. The citation read: "For leadership and effective effort in advancing the standing of the Association of the United States Army, reaching beyond his outstanding efforts in behalf of the Bogardus S. Cairns Chapter, toward the formation of a regional organization in the Southeast United States, and in assisting in the formation of additional chapters of the Association."

Henry Leavenworth Chapter was selected as the chapter doing the best job during the current year. It was presented with the Association's Scroll, the citation on which read: "For outstanding performance during the period October 1958 to August 1959. The Chapter was rated first among all chapters of the Association of the United States Army for its accomplishments toward a more effective national defense, for its effectiveness in gaining and maintaining membership, for the percentage of members attending chapter meetings and functions, and for its activities in behalf of the United States Army and the Association of the United States Army."

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information for appropriate action in AUSA's areas of interest.

Advertising

I reported to you last year that we had increased our $50,000 gross advertising business in 1955 to $140,000 in 1958. We estimate that during 1959 our gross revenues from advertising will be in the area of $185,000 to $190,000.

We have been very careful about the advertising which we have accepted. A few advertisements, particularly those of a non-institutional nature where we were not positive of the worth of the materials being advertised to our members, were refused. Generally speaking the type of advertising carried in ARMY Magazine has enhanced its appearance and contributed to the interest of the reader.

Annual Meeting

All of us have been tremendously pleased with the manner in which our Annual Meeting has grown each year. This year we had to limit exhibit space and table reservations for social functions in order to try to accommodate all of those who desired them. We can take pride in the fact that our Annual Meeting has become one of the major meetings of its kind, attracting people from all over the g'obe and resulting in excellent news coverage of our activities. It is a most effective forum for the views of all who support a strong Army as a vital part of our National Defense.

Awards

The Association's Awards Program was revised since the last Annual Meeting. You have seen a portion of the awards program in action at the luncheon yesterday and you will see more at the banquet tonight. In addition to the President's medals and the Chapter scroll, AUSA, following very strict criteria, awards about 375 AUSA ROTC medals each year to cadets in Army ROTC units, and over 50 to outstanding graduates of the Army's Service Schools. We also have Certificates of Appreciation and Certificates of Achievement on the National level, and Certificates of Appreciation on the Chapter level.

On the 26th of June AUSA presented cash awards to the *military* winners of the competition for the best papers presented at the Army Science Conference at West Point. Civilian winners receive cash awards from the Federal Incentives Awards program, but the Government gives no money to the military winners. AUSA fills the void by awarding the military winners the same amount in cash that they would receive if they were civilian employees.

AUSA Publications

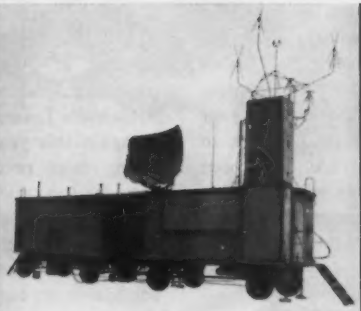
In addition to ARMY, your National Headquarters issues other publications. All but the newest members of AUSA have received at least one issue of my Letter to the membership. Comments received from so many of you indicate that this Letter is a much appreciated service, tying you more closely to AUSA as an organization. I am grateful for your comments. More Letters will be distributed as events justify them and finances permit.

Your small staff also produces Chapter Newsletters, ROTC Company Newsletters, Sustaining Membership Newsletters, memoranda on proposed legislation, and other publications for special purposes. This is an imposing array of material—and all of it has direct bearing on attaining our Aims and Objectives. I mention this partly to assure you that your membership dues and income from other sources are being used wisely and effectively.

Book Service

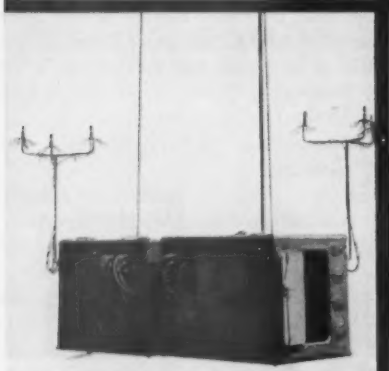
A notice in ARMY magazine headed: "A Statement of

1. RADAR TARGET SIMULATOR. Radar Trainer **AN/GPN-T2** provides 3-dimensional, realistic aircraft targets on any radar scope. Subminiaturization puts electromechanical servos, 200 vacuum tubes all in one 30-inch console.



2. GROUND CONTROLLED APPROACH RADAR SYSTEM AN/MPN-11 for air safety, is contained in two ground- and air-transportable vehicles. It provides a completely self-contained navigation aid that operates worldwide.

3. PORTABLE MAINTENANCE JUNCTION BOX allows functional equipment groups of complex radar sets to be interconnected on a maintenance bench. The mobile box provides accurate testing for comprehensive subsystems.



4. COMPLETE TACTICAL AIR TRAFFIC CONTROL CENTER AN/TSQ-18 is reduced in size and weight to three packages for helicopter transport. The system functions in all weather at forward air strips and in terminal areas.

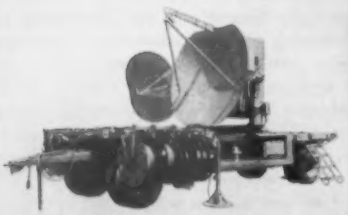
GILFILLAN/1959

8 MORE WAYS GILFILLAN PROVES ITS ELECTRONIC SYSTEMS CAPABILITY LEADERSHIP

Today Gilfillan's capability is at its greatest peak in the Company's 47-year history. Shown here are 8 Gilfillan achievements representing successful know-how in the development and production of complete electronic systems.

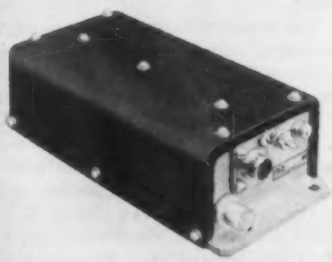
These 8 examples and many others have been and are in operational use by military and civilian agencies in 38 countries throughout the world.

5. LIGHTWEIGHT GCA RADAR SET, QUADRADAR, AN/FPN-33 is a highly mobile surveillance, approach, landing and taxi system that has achieved an enviable world-wide record of operation with both military and civilian users.



6. GROUND-BASED COUNTERMEASURES AN/MLQ-7 is a ground jammer for use against airborne bombing radars. Equipment supplies broad frequency coverage, rapid reaction capability with advantages of semi-automatic operation.

7. RADAR-TRACKER INTERROGATOR OA-1333/MSW-2 with radome (portion of an all-weather system). Developed for Corporal System as a low-priced, high-accuracy and -performance radar, uses can now include range instrumentation.



8. FM-FM TELEMETRY TRANSMITTER 86600 operates in VHF frequency spectrum of 215-235 and 235-260 megacycles. High-reliability, small size transmitters meet all IRIG requirements, including rejection of spurious responses.

FOR MORE COMPLETE INFORMATION, WRITE OR CALL

Gilfillan

1815 VENICE BLVD., LOS ANGELES 6, CALIFORNIA. DUNKIRK 1-3441

Policy concerning book publishing and book sales by the Association of the United States Army" told you about the curtailment of our book-publishing activities. This policy was not determined without proper, serious consideration. Your Association still stands ready to assist you with your book-purchasing, and to continue the historic discount to members. Items bearing the insigne of AUSA have been made available to our members. Other items will be added as the demand develops. This particular service is a source of publicity and advertising for AUSA, although it is only a minor producer of revenue.

Cooperation with Other Organizations

As AUSA grows in both membership and prestige, other Associations and organizations seek us out to bespeak cooperation in our activities for National Defense. The Airborne Association, the Military Police Association and the Army Aviation Association deserve special mention because they offered us their support very early in our reorganization. The Armor Association works with us, and supports our efforts in a gratifying manner. We have been invited by others such as the National Military-Industrial Conference, and VFW, to name just two, to coordinate and participate in the attainment of mutual objectives.

Financial

On the financial side of our operations, we have continued to make good progress. At our last meeting I was able to report a net income of $6,400.00 for the first six months of 1958. By the end of last year, we were able to show an increase in our surplus of nearly $40,000.00. A major part of this sum has been used to replace a portion of the reserves depleted in the early stages of our reorganization. The balance is being used to pay for the expansion of a number of Association programs—the revision of our pamphlet *Security of the Nation* and the publication of the President's Letter, just to name a few.

Again this year, our major sources of income are providing more revenue. While our costs have continued to increase too, due to better management they have not increased at the same rate as our income. It is too early to predict our net income for this year. As long as the present trend continues, we can look forward with ever increasing confidence to our financial stability.

Council of Trustees

I would like to take a moment to tell you how much I am impressed by both the caliber of the personnel and the devotion to their duties, displayed by your Council of Trustees. All of these gentlemen are busy people, and their everyday efforts are devoted to important projects. Yet, at least five times each year, they drop everything and come to Washington to consider AUSA problems. They do this without reimbursement of any kind—all they derive is the sense of satisfaction from participating in an activity important to the future of the United States.

And, in turn, I am justly proud of you gentlemen, and of the members you represent.

It has been through your sustained interest, enthusiasm, and support, that the Association of the United States Army has attained its present position of influence, and its capability as an effective spokesman for a strong Army.

My sincere and warmest thanks to each and every one of you.

Minutes of 1959 Annual Meeting

1. The 1959 Annual Business Meeting of the Association of the United States Army was held on 5 August 1959, in Sheraton Hall, Sheraton Park Hotel, Washington, D. C.

2. The meeting was called to order by the President at 1338 hours.

3. Upon motion from the floor, and proper second, it was voted to dispense with reading of the minutes of the 1958 Annual Meeting.

4. The President announced the re-election of Col. Willard F. Rockwell, to serve a third term as Chairman of the Council of Trustees, and introduced Colonel Rockwell to the delegates and members. The President then introduced the other members of the Council of Trustees present on the platform.

5. The President read his Annual Report to the Membership. Upon motion from the floor, and proper second, the Report was accepted, and is appended to these minutes as a part thereof.

6. The President called on Chester R. Davis, Chairman of the Special Committee on Membership, appointed at the Delegates' Meeting held on 4 August. Mr. Davis, after a few preliminary remarks, read the Committee's report, and moved its adoption and referral to the Council of Trustees. Upon proper second, the Committee's report was accepted. The report follows:

> "The committee unanimously recommends to the Council of Trustees that each and every member of the Association whose mailing address is within the geographical area of a chapter will automatically be enrolled by the national association as a member of that chapter, unless and until, the member indicates in writing to the national headquarters that he does not wish to be a member of that chapter, but desires to be a member at large.
>
> "The Committee recommends to the Council of Trustees that a system be devised which will make it possible for an individual, who so desires, to be a member of a chapter other than the one which has jurisdiction over the place in which he receives his mail."

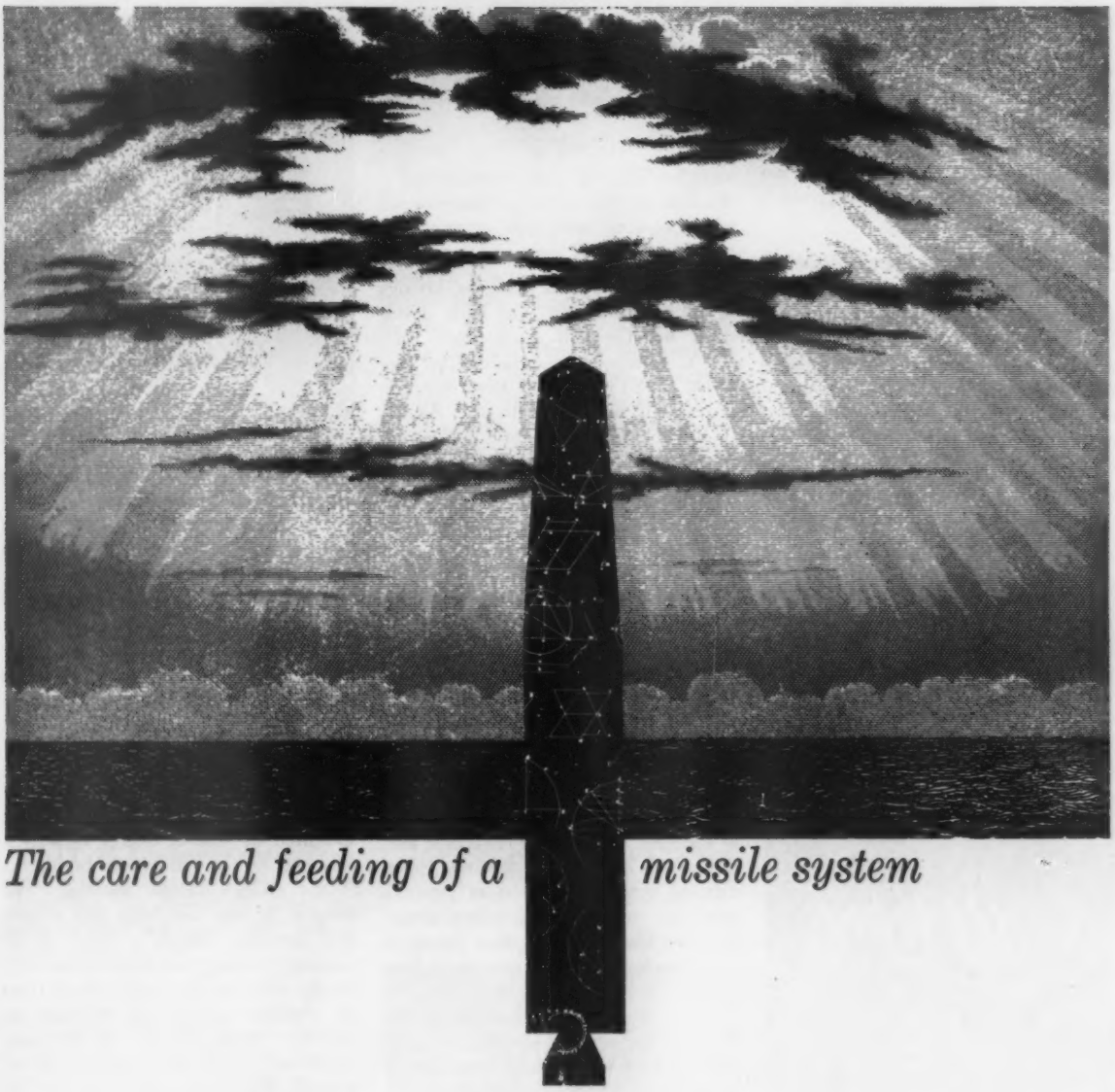
7. The President read the Business Meeting Procedures and the Procedures on Resolutions, and introduced Brig. Gen. William E. Sutton, Chairman of the Resolutions Committee, who in turn introduced the members of his Committee.

8. General Sutton read the Preamble to the Resolutions, and moved its adoption. Following regular parliamentary procedure, the Preamble and twelve resolutions (which are made a part of these minutes and appended hereto) were adopted by the membership. General Manton S. Eddy, a Trustee, spoke concerning Resolution No. 1, and urged not only that it be adopted, but that every person present go forth and work to prevent further cuts in Army strength. There was some discussion on Resolution No. 11, and one dissenting vote (which was withdrawn when it was explained that under the rules written ballots would be required if the dissenting vote were not withdrawn). The discussion centered around whether the Resolution were permissive or required regional organization; upon assurance that the intent was permissive, the Resolution went to vote, and passed.

9. Colonel William Baumer, Delegate from the First Army Area, offered a Resolution of thanks to the Resolutions Committee, which was passed. This Resolution reads as follows:

> "Mindful of the conscientious and intelligent work of the Resolutions Committee, I would like to move the adoption of a resolution thanking the Resolutions Committee for their good work."

10. The Meeting adjourned at 1500 hours.



The care and feeding of a missile system

It takes more than pressing a button to send a giant rocket on its way. Actually, almost as many man-hours go into the design and construction of the support equipment as into the missile itself. A leading factor in the reliability of Douglas missile systems is the company's practice of including all the necessary ground handling units, plus detailed procedures for system utilization and crew training. This complete job allows Douglas missiles like THOR, Nike HERCULES, Nike AJAX and others to move quickly from test to operational status and perform with outstanding dependability. The wide experience of Douglas in producing large rocket systems has provided the company with unmatched capabilities in this field.

Alfred J. Carah, Chief Design Engineer, discusses the ground installation requirements for a series of THOR-boosted space probes with Donald W. Douglas, Jr., President of DOUGLAS

MISSILE SYSTEMS ■ SPACE SYSTEMS ■ MILITARY AIRCRAFT ■ JETLINERS ■ CARGO TRANSPORTS ■ AIRCOMB ■ GROUND-HANDLING EQUIPMENT

Irons in the Fire

Separating Men From Women

A new frontline radar, so sensitive that it can differentiate between a walking man and woman, was demonstrated at Fort Myer, Va. Already operational (12 units delivered, 37 in production), the AN/TPS-25 combat surveillance radar was developed by the Hazeltine Division of Hazeltine Corporation and the Army Signal Corps. The Tipsy-25 can be transported by truck, helicopter, or small, two-wheel trailer and can be

Typical of the images which operator of AN/-TPS-25 radar sees on his screen: (1) a train, (2) an automobile, (3) a walking man, and (4) a walking woman.

placed in operation by four men in about 30 minutes. The long-range member of a family of three battlefield surveillance radars, the AN/TPS-25 can pinpoint and distinguish moving targets up to 20,000 yards in all weather, night and day. Distinctive video patterns and audio tones enable the operator to differentiate to a useful degree between various types of targets.

New Container for STRAC

A new lightweight fiberboard container, which is expected to provide a 60-per cent reduction in packing and crating materials as well as savings in time and weight, has been developed by Tri-Wall Containers, Inc., N. Y. Designed to enhance the mobility of STRAC, the new shipping boxes will be used with the Army's CONEX (container express) shipping container. The new containers have a semi-rigid construction, a capacity of 1,000 pounds, and can be transported slung from helicopters or in cargo aircraft. The containers are being tested by STRAC at Fort Eustis, Va.

Keeping a Vacuum on Missiles

With so much being alleged about military personnel being required to perform menial tasks, it may not startle anyone to know that certain soldiers are running vacuum cleaners at various Army missile sites. Their job is to keep the missiles free from dust and dirt which could cause misfires. Since existing commercial vacuum cleaners could not meet the requirements at missile sites, the Army Engineer Research and Development Laboratories at Fort Belvoir developed the two cleaners now in use. Both have three-quarter horsepower motors, operate off 115 volts, and are single phase. One cleaner is a 60-cycle unit, the other is 400-cycle. Now being manufactured by the Ideal Industries, Inc., Sycamore, Ill., under Army contract, the cleaners are made of non-conductive material to prevent shocks from the electronic gear.

Missiles Ahead of Target

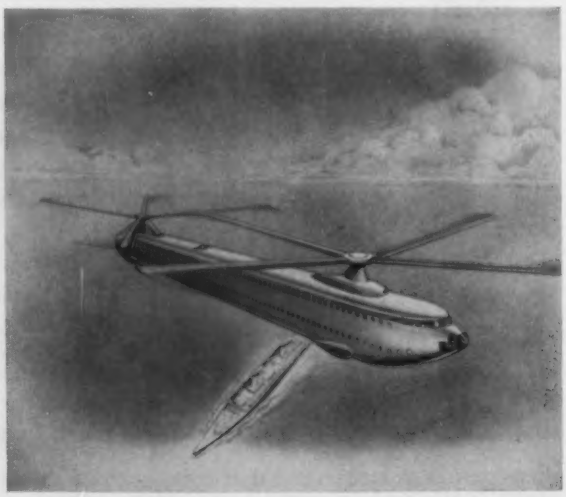
Aeronca Manufacturing Corp. of Middletown, Ohio, has delivered the first 10 Pogo-Hi training target missiles to the Army at White Sands "over a week ahead of schedule." Aeronca's contract, calling for an initial quantity of 100 Pogo-Hi's, required delivery of the first 10 within 60 days. In response to urgent requirements, Aeronca expedited delivery and had the missiles en route 11 days ahead of schedule.

One-Man Missile

A new guided missile—Redeye—which can be carried by one soldier and fired by him at enemy airplanes, was one of the exhibition highlights of the AUSA annual meeting. The weapon is four feet long and missile and launcher weigh a total of 20 pounds. The range of the new one-man missile was not disclosed. Fired from the shoulder the Redeye contains an infrared "heat seeker" in its nose which will carry it to low-flying enemy aircraft. The Army has awarded a $6

Nuclear Copter Studied

A nuclear-powered helicopter could have a fuselage 300 feet long and could cruise at over 200 m.p.h. with a gross weight of 500,000 pounds—almost 10 times that of the largest existing rotary-wing craft—according to feasibility studies released by Bell Helicopter Corp. The studies of such nuclear aircraft are strictly a drawing board project, Bell stressed, and there are no present plans to build such a vehicle.



Redeye, the new shoulder-fired missile

million contract for development of the missile to the Convair Division of General Dynamics Corporation.

HOT SPARKS

The T55-L-3 helicopter engine, developed by the Lycoming Division of Avco Corporation, has successfully passed and achieved Army acceptance of its 50-hour flight rating test.

* * *

A portable, fully transistorized Recomp Computer has been ordered by Stanford Research Institute for use in its contractual work with the Army's Combat Development Experimentation Center at Fort Ord, Calif. The computer, purchased from the Autonetics Division of North American Aviation, Inc., is expected to speed the computations necessary to determine the results of Army field exercises. Pertinent data are placed in the unit's memory disc prior to and during the actual running of military problems and the computational results are available within minutes.

* * *

The Ryan Aeronautical Company has been awarded a $3.5 million contract for installation of its electronic Doppler navigation equipment (Model 120A) in the Grumman YAO-1 Mohawk, Army prop-jet aircraft designed to operate from small, unimproved fields. The 120A computes and displays ground speed and drift angle on an indicator and provides electrical outputs of these data for use in other instrumentation within the aircraft.

* * *

Development of a seamless inflatable radome—weather cover for missile-tracking antennas—has been announced by Goodyear Tire and Rubber Company. Goodyear will manufacture the improved radome for Bell Telephone Laboratories for use in the Nike-Zeus anti-missile missile program. Previous radomes were made with a lap joint seam, producing variations in skin thickness and a consequent distortion of the radar beam. The improved version is constructed in "orange peel" sections which are staggered and laminated to give a uniform thickness of three thirty-seconds of an inch. Made of white Hypalon-coated nylon, the radome will be lighter and easier to maintain than its predecessor, will withstand wind velocities of up to 150 mph and temperatures ranging from 65° below zero to 135° above, Fahrenheit. An airlock will be provided so the radome can be entered through a door while pressurized. The radome can be erected by five or six men in two hours.

* * *

Television, as an educational medium, is getting a straight A at Redstone Arsenal. After one year of teaching missile forces their complicated lessons via TV, two former NBC-TV executives can look back on these achievements: a 27 per cent saving in training time in lecture and conference type instruction, a five per cent boost in examination grades, and a seven per cent rise in student retention.

* * *

The "schoolmasters," Maurice Penn and Clifford Paul, who are working under an Army contract with TelePrompTer Corporation employ a "staff" of 17 TV cameras, five mobile units, and video tape equipment. It is estimated that 7,500 missile technicians will be trained at Huntsville this year via the video method.

* * *

A new reflective aggregate, which vividly reflects the landing lights of airplanes, has been developed by Minnesota Mining and Manufacturing Company. The new "Scotch-Rok" aggregate provides pilots with depth guidance and a path of light which is visible at night on the approach of an unlighted runway from two miles, at an altitude of 500 feet. After a year of testing, it was found that only those areas which were worn by traffic required retouching; weathering alone did not affect the treatments' reflective qualities. The reflective aggregate is available in two colors—white for runways and yellow for other airport surfaces.

THREE-ENGINED COPTER COMING

The "all-weather" 25-passenger Sikorsky S-61 helicopter, scheduled for its first flight in 1960, will be powered by three General Electric T-58-6 gas turbine engines and will attain speeds of over 150 mph. The interior of the new helicopter is designed for passenger comfort, contains extra baggage space, a galley and a lavatory. A flying boat hull will permit the S-61 to operate from land and water.

THE MONTH'S BOOKS

Our Strategic Problems

NATIONAL STRATEGY IN AN AGE OF REVOLUTIONS
Edited by George B. de Huszar
Frederick A. Praeger, 1959
282 Pages; $6.00
THE FAILURE OF ATOMIC STRATEGY
By Col. F. O. Miksche
Frederick A. Praeger, 1959
224 Pages; Index; $4.50

Reviewed by

COL. WILLIAM R. KINTNER, *Infantry, member of the Foreign Policy Research Institute and co-author of the recently published* Protracted Conflict: A Challenging Study of Communist Strategy.

Both these books concern themselves with the vast conflict between the Sino-Soviet bloc and the Free World, and the strategic problems confronting the United States as leader of the free peoples in the global struggle. Both recognize that the core of the conflict is as much ideological, political and economic as it is military.

National Strategy in an Age of Revolution is a compilation of the many significant addresses and panel discussions given or held at the Fourth National Military Conference which convened in Chicago in February 1958. The list of contributors attests to the growing importance of this annual conference as a significant forum for discussing the complex range of strategic problems confronting the United States. The reader is fortunate to be able to find, in one book, the concisely stated views of such authorities as Wernher von Braun, Senator Henry Jackson, General Maxwell D. Taylor, Sir Ralph Cockrane and Robert Strausz-Hupé. Their contributions to this volume reflect the general orientation of these consistently provocative military-industrial conferences: that strategy, in addition to its military component, now embraces the integrated management of the political, economic, educational, technological, industrial and ideological resources of the entire nation. The caliber of the contents has been enhanced by George de Huszar's editorial skill.

Colonel Miksche's book covers much the same strategic ground as de Huszar's compendium. Miksche, concerned with the total pattern of conflict and the Soviet calculated drive to gain world domination through economic and sociological subversion, recognizes the revolutionary character of our era and the crucial meaning of the battle for the uncommitted millions who comprise the non-white world. He argues that a successful strategy must combine military, economic and political measures, and that the threat of the use of force will continue to be indispensable to the conflict strategies which both sides pursue. But Colonel Miksche sees very little value in the utilization of atomic weapons as one of the key forms of military power. In fact, he categorically asserts that "Atomic warfare, with its super-weapons, is a too rigid form of warfare." Then with obvious reference to the U. S., he contends that "States which base their policy too one-sidedly on atomic weapons are, as allies, politically unreliable and militarily dangerous."

Miksche's exhaustive criticism of the deficiencies of Western—particularly American—strategy might prove more effective if the book were not tinctured by a persistent anti-American bias. The strategy being pursued by NATO for the defense of Europe has been adopted primarily because of the failure of many of the European member-nations to realize the force goals which they themselves have set. "The real task of European defense," argues Miksche, "is to create in central and western Europe a cover under whose protection Europe will be able to safeguard its interests and conflicts outside of Europe, if necessary, by active intervention." Thus far the Europeans have made little effort to develop such a force. In these circumstances, Miksche's frequent castigation of U. S. policy comes with a certain amount of ill grace. In one place he asserts that "The military policy of the United States, which is built up on bases situated in foreign countries, is doomed sooner or later to failure." In another he contends that "watching the Americans at planning, gives one a feeling of standing on a huge building site where new houses are forever being started, but never becoming inhabitable because they are never finished." In a rare mood of charity he tempers this observation by admitting that American decisions "often reflect the instability of the European situation."

Many of Miksche's condemnations of "the war mechanicians" and "homo-technicus" overlook the rapidly accelerating forward surge of technology. His conclusion that the introduction of tactical atomic weapons into European defense is both militarily and politically absurd overlooks the potential development of extremely low-yield clean atomic weapons which may one day make territorial aggression as unattractive as a mutual and suicidal thermonuclear exchange between two major powers. Miksche's understanding of the relationship between military strategy and political policy is acute, but his nostalgic desire to return to the good old days of the "155" leaves the reader somewhat cold.

In sum, this is a provocative and stimulating attack on evolving U. S. military policy since 1950. If the book's aim is to arouse the peoples of western Europe to a greater effort in their own defense, it will serve a very useful purpose.

At Hole-in-the-Ground HQ

THE CLOCK WITH FOUR HANDS
By James Leasor
Reynal & Company, 1959
314 Pages; Illustrated; Index; $5.00

Reviewed by

FORREST C. POGUE, *author of the Army's official* The Supreme Command, *who is Director of the Research Center, George C. Marshall Research Foundation.*

Many of the books by war leaders which appeared shortly after World War II stressed British-American cooperation during the conflict. Later memoirs were more candid. During recent months several works by or about British generals have taken some rough jabs at American leadership and policy. Mr. Leasor in this account based on the experiences of General Sir Leslie Hollis, wartime secretary of the Joint Planning Staff of the British Chiefs of Staff, follows this trend. For example, we are told that the clock with four hands was a timepiece in the underground office of the War Cabinet from which the British leaders directed their war effort. Two of its hands showed Greenwich time and two showed Washington time, some five hours later. General Hollis, while noting that the four hands were on the same clock, says that the clock and the time-lag involved came to be looked upon as symbolic of the differences between British and American thinking. The book suggests that many of the problems which have afflicted the world since the war were due to that difference.

General Hollis makes clear in his introduction that Mr. Leasor's book is neither a history of the war nor a biography. The General kept no wartime diary, but apparently has made up for it by writing down for Mr. Leasor a series of anecdotes, character sketches, and postmortems. The author, who is best known for his book on the Indian Mutiny, *The Red Fort*, has interspersed these comments through a general narrative based on a variety of sources.

Such a method is completely valid, but Mr. Leasor sometimes uses a relatively brief comment by General Hollis to lend color to an event the General did not witness, or to bolster an argument for which no evidence is offered. For example, seven pages—based largely on Churchill's memoirs—are given to the historic meeting between the Prime Minister and M. Reynaud shortly before the fall of France and the episode is tied to General Hollis, who was not present, by a paragraph in which he recalls that it was a sunny day and that he reflected on the fact that people he saw in the street were unaware of the fearful danger which faced Britain.

The method is seen at its worst in those pages dealing with U. S. attitudes toward the Soviet Union. Mr. Leasor suggests that General Marshall's selection as Chief of Staff in 1939 over a number of senior generals paved the way for a pro-Soviet policy. In a remarkable passage, filled with confused chronology, he declares: "In 1942, Roosevelt still held out against the suicidal cross-Channel operation propounded at Stalin's urging by Marshall, citing in defense of his views the poor showing of American troops in the North African campaign. But the infatuation progressed. General Stilwell, whose sympathies were Left rather than Right, was appointed to the Far East Command; and the secret American Advisory Committee on Post-War Foreign Affairs attracted not only such recruits as Dean Acheson, Harry Hopkins and General Marshall, but also more sinister figures of the stamp of Alger Hiss and Harry Dexter White." None of this is attributed to General Hollis but his imprimatur is implied by the inclusion of equally dubious statements by him several paragraphs later.

General Hollis pictures the shadow of communism and slavery increasing daily over those remnants of the British Empire such as Ceylon, Burma, Pakistan, Iraq, Egypt and India. "Much of this," he concludes, "could have been avoided had the Americans been less hostile to what they regarded as British colonialism." His intimation here and elsewhere that the Americans were largely responsible for changes and explosions in the Middle East and Asia manage to ignore such factors as rampant nationalism, economic disorder, wartime pressures by Germany and Japan, postwar pressures by the Soviet Union, British loosening of colonial bonds since World War II, and a half century of mistakes in British foreign policy by Liberal, Labor and Conservative governments.

Unfortunately the generalizations on politics and strategy overshadow the valuable parts of the book. General Hollis is particularly qualified to tell how the Prime Minister and his advisers operated from their "Hole in the Ground" headquarters below Whitehall. When he has stuck to that he has added to our knowledge of the war. He has contributed some new anecdotes on the Prime Minister and confirmed the accuracy of some old ones. In these pages he is fair to the Americans, often referring to them with great praise. He is especially good on such British figures as General Ismay and Lord Beaverbrook.

When one reads the sections on Britain's military preparations during the early days of the war, on Lord Beaverbrook's activities as Minister of Aircraft Production and as Minister of Supply, and on the developments which took place at Combined Operations Headquarters, one wishes that Mr. Leasor

Selected Check List of the Month's Books

This run-down of some of the books received during the month preceding our deadline is to give our readers who like to follow current literature a monthly check list of the most important, useful and potentially popular books. Any of these titles may be purchased through the Combat Forces Book Service.

THE CANADIAN ARMY: 1855-1958. By C. E. Dornbusch. Hope Farm Press, 1959. 216 Pages; Illustrated; Paper, $6.00. A list of all Canadian regimental histories and a guide to the regiments. By the compiler of similar lists for the U. S. Army and Air Force, who is unit histories specialist at the New York Public Library.

FAR EAST TRAVEL GUIDE. By John C. Caldwell. The John Day Company, 1959. 246 Pages; Index; $4.00. Up-to-date suggestions on how to see the most at the least expense.

FLYING SAUCERS. By C. G. Jung. Harcourt, Brace & Company, 1959. 186 Pages; Illustrated; Index; $3.95. The renowned psychiatrist concerns himself chiefly with the question of whether UFOs are a psychological projection of modern man's anxieties.

THE FROGMEN. By T. J. Waldron & James Gleeson. Berkley Publishing Corporation, 1959. 173 Pages; Paper, $.35. The daring exploits of underwater fighters in WWII.

ILLUSTRATED GUIDE TO U. S. MISSILES AND ROCKETS. By Stanley Ulanoff. Doubleday & Company, 1959. 128 Pages; Illustrated; $3.95. An album of all the vital information on the 65 basic missiles and rockets in use or under test. Text is in layman language, and illustrations (which include silhouettes) are good.

MAN IN SPACE. Lt. Col. Kenneth F. Gantz, Ed. Duell, Sloan & Pearce, 1959. 303 Pages; Illustrated; Index; $4.00. The USAF program for developing the spacecraft crew, presented through an anthology of articles by prominent airmen. These articles were originally intended for publication in *Air University Quarterly Review*.

MEDICAL SCIENCE AND SPACE TRAVEL. By William A. Kinney. Franklin Watts, 1959. 150 Pages; Illustrated; Index; $3.95. How today's flight surgeons work both in the air and in laboratories to chart the unknowns of human reaction to time and space. Foreword by USAF's Surgeon General.

THE OFFICIAL ENCYLOPEDIA OF BASEBALL. By Hy Turkin & S. C. Thompson. A. S. Barnes & Company, 1959. 593 Pages; Illustrated; $6.95. Second revised edition, includes 1958 records. History of baseball, records of all who have ever played in the big leagues, world series, best lifetime marks, league leaders, special records, honored players, umpires, administration, playing hints, official rules, and other features. A real buy for record hounds.

THE PANTHER'S FEAST. By Capt. Robert B. Asprey, USMCR. G. P. Putnam's Sons, 1959. 317 Pages; Illustrated; Index; $5.00. A biography of the notorious Col. Alfred Redl, the Austro-Hungarian Army's G2 who was double-agent for the Russians. The author had access to never before released official documents.

PROTRACTED CONFLICT. By Robert Strausz-Hupé, Col. William R. Kintner, James E. Dougherty, Alvin J. Cottrell. Harper & Brothers, 1959. 203 Pages; $3.95. All authors are on the staff of Foreign Policy Research Institute. They show that conflict is a basic element of Communist doctrine; that only by understanding the principles and methods of the strategy of protracted conflict will we be able to combat it effectively and seize the strategic initiative.

SPACEPORT, USA. By Martin Caidin. E. P. Dutton & Company, 1959. 380 Pages; Illustrated; Index; $4.95. The story of Cape Canaveral and the USAF Missile Test Center at Patrick AFB. Well illustrated.

THIRTEEN MONTHS IN THE REBEL ARMY. By William G. Stevenson. A S. Barnes & Company, 1959. 160 Pages; $3.95. The story of a Yankee who was forced to "volunteer" for Confederate service and became a lieutenant before he escaped. A good insight into the South's fervent will to win.

and General Hollis had given more space to these matters. On political and strategic questions, they have reiterated a number of old charges without adding any new evidence.

Men in Battle

THE WARRIORS: Reflections on Men in Battle
By J. Glenn Gray
Harcourt, Brace & Company, 1959
242 Pages; $3.95

Reviewed by
CAPT. ROGER W. LITTLE, Medical Service Corps, *a sociologist who has done important research in the mores and customs of small combat units, and has written many articles on these subjects.*

This is a sensitive and brilliant analysis of war at the personal level, written as an attempt by the author to relate his combat experience to the continuity of life itself. It is based primarily on memories that have been sharpened by references to a personal diary and buttressed by extensive reading in the literature of war. The result is the best by far of any sociological or psychological "research" on combat behavior, by an author who was obviously on the ground. The book is difficult to review because it is so thoroughly distilled and precisely organized. I found the author's thoughts to be of major significance.

Battle is seen as suspending the personality of the civilian by appealing to three "delights": the awesome spectacle of combat; the comradeship implicit in some activity directed toward a common goal; and the thrill of destruction. Most men in combat are seen as rejecting death as unreal or improbable. That they persist in activity that brings death is attributed to a stuporous state induced by training and fatigue. There are others, however, who seem to have no fear of death. One type has preserved the child's notion of omnipotence and considers himself invulnerable. Another, the man of destiny, refuses to admit his mortality, "vain and empty, contemptuous of all who are not like themselves." Finally, there is the coward, constitutional and occasional, whose major defect appears to be the lack of solidarity with his fellows in the combat group.

The soldier's ability to kill and be killed is fostered by creating for him an image of the enemy as a "thing" so evil as to inspire hatred and repugnance. The "enemy" is always maintained as an abstract concept, a "shadowy image," divorced from the reality of personal experience. By fostering an image of the enemy as totally evil, there is created in the soldier an image of himself as "an avenging angel," impervious to reason and reflection. When the excitement of combat has passed, the enemy again becomes a person, seen as one who was either temporarily misguided or compelled to fight against his will.

The chapter on "Images of the Enemy" is the most relevant for contemporary thought. Gray has discerned the vast discrepancy in the effectiveness with which psychological "warfare" changes the enemy from men to devils, between combat troops and supporting units progressively remote from combat. The effects of this discrepancy were easily perceived in the behavior of the "younger brother" occupation troops whose conceptions of the "enemy" were distorted for home-front consumption.

This book's contribution to the literature of war is in its emphasis on the universality of combat behavior and motivation. By crossing cultural barriers, Professor Gray has demonstrated the fallacies inherent in explanations which fall back on psychologistic theories of maternal dependency. The book will be of value to all of us who, like Gray, have struggled through the years since the war, to understand what meaning that episode had for our lives. For those who missed combat, who have sought to understand it from a distance in time and space, *The Warriors* will provide insights that never before have been as well expressed. It is a landmark in the literature of war.

Luxembourg and the Bulge

LA BATAILLE DES ARDENNES: G. I. JOE PLAID NON COUPABLE!
By Maurice Delaval, LSD
Imprimerie Medicale et Scientifique, 1958
178 Pages
LES DEUX LIBERATIONS DU LUXEMBOURG, 1944-1945
By Lt. Col. E. T. Melchers
Editions du Centre, 1959
264 Pages; Illustrated; Maps; $6.25

Reviewed by
MAJ. GEN. HAROLD W. BLAKELEY, *retired, who served with the 4th Infantry Division during the operations narrated in these volumes.*

Here are two books which, although written in French, belong in American military libraries. The first *(The Battle of the Ardennes: G. I. Joe Pleads Not Guilty!)* deserves a place as the strongly argued, controversial work of a Belgian civilian; the other *(The Two Liberations of Luxembourg)* as a thorough military study by the representative of Luxembourg at SHAPE. Both deal primarily with operations of the U. S. Army.

Dr. Delaval is a dentist who lives in Vielsalm. His book is given the highest praise in prefaces by two professional historians, Professor Henri Bernard of the Belgian Royal Military School and Colonel Cossé Brissac, head of the historical service of the French Army.

Delaval has organized his story in an unusual manner. Taking phrases which he had found in the writings of "journalists, war correspondents and even well-known military writers," he constructed a single statement and then used each of the phrases in it as a chapter head: "Immersed in Capuan delights [that is, luxuries], the American troops—following the total failure of the American G2—were struck by Field Marshal von Rundstedt's attack; the surprise was complete—panic-stricken, the Yankee soldiers fell back in disorder—the U. S. command was slow to react—nevertheless, thanks to the intervention of British troops—and to the bloodthirsty motorized cowboy, George S. Patton—and above all, thanks to the military genius of Marshal Bernard L. Montgomery—the military situation which bordered on disaster was restored six weeks later." The author then proceeds in each chapter to demolish the claim made in its title.

In view of Marshal Montgomery's recent book, the chapter on his part in the Battle of the Bulge is of particiular interest. Included is a notable quote from Professor Bernard: "His [Montgomery's] role in the battle of the Ardennes was very meritorious, but the author of the fantastic recovery on the north of the pocket was Lawton Collins."

Dr. Delaval pleads not guilty not only for the "G. I. Joe" of his subtitle, but for American commanders.

The book by Colonel Melchers covers in considerable detail the initial liberation of Luxembourg in September of 1944 and the operations in Luxembourg and its vicinity during the Battle of the Bulge. It will be of particular interest to veterans of the 4th, 5th, 26th, 28th and 80th Infantry Divisions and of the 5th Armored Division as well as to those of many other units which had a part in the two liberations.

The author's comments on the American intelligence estimates in early December and on the American defense preparations are interesting. The G2 error was essentially a failure to foresee an action based, not on military logic, but on Hitler's intuition. The failures to take elementary defense precautions—trenches, barbed wire, minefields, and the like—were caused largely by the fact that the Americans had "just come from kicking the enemy across Europe," and regarded each halt as merely a stop for rest in their pursuit of the foe.

The author might have added that there was an almost complete ignorance among infantry companies and platoons of how to organize a defensive position. Their commanders, practically all non-professionals, had in general only a vague recollection of some instruction in the subject back in training camp, months before. In the case of battlefield-promoted officers, the whole subject was often completely new. The only solution was intensive instruction and supervision by sen-

ior officers, but often there was insufficient time. The 4th Infantry Division, for example, came down from its rough fight in Hürtgen Forest, closed into its new area on 12 December, and had the German attack in its lap before dawn on the 16th.

In such situations, G. I. Joe can, in Dr. Delaval's phrase, plead not guilty if he is overrun; he can be very proud of himself and his unit if he holds on.

The World's Airpower

THE AIR FORCES OF THE WORLD
By William Green & John Fricker
Hanover House, 1959
336 Pages; Illustrated; Index; $10.95

Reviewed by

STEFAN T. POSSONY, *member of the faculty of the Foreign Policy Research Institute and author of* Strategic Air Air Power.

This is a valuable book. The senior author, William Green, is well known as author and compiler of several aircraft reference books. John Fricker is a military staff writer of *The Aeroplane*, a reputable British magazine.

The authors set themselves the ambitious task of recording "the dramatic growth of air power over the past half century on an international basis." They recite the history of the air forces of no less than 83 nations. Since in some countries they chronicle the story of several (for example, two in Britain, three in U. S.), they cover well over 90 separate establishments. They also describe the armaments of these forces, discuss their present equipments, and wherever possible provide data on numerical strengths, base structures, and combat readiness. The information extends generally to the end of 1957.

No such comprehensive history has been written before. Although the facts concerning air postures of the various countries are valuable, these authors' main contribution lies in the historical field. These histories are interesting in themselves, especially since the book is so organized that the simultaneous development of the major air powers can be followed, on a comparative basis, by cross-reading. An understanding of those historical backgrounds also provides a very useful basis for evaluating the present worth and the future potential of the world's air forces.

In amassing their documentation from numerous sources and many languages, the authors were helped by 35 experts, air attaches (presumably from and to the United Kingdom), "air force headquarters and aircraft manufacturers throughout the world." It is quite apparent that the authors knew how to handle their arduous research task. They have shown discriminating judgment in selecting reliable information. There is no doubt in my mind that this volume has attained high standards of accuracy and pertinence. Since the huge volume of data also is skillfully presented and since the writing is concise as well as clear, it can be recommended both as stimulating reading and as a highly suitable addition to any military reference library.

This is not to say the volume is perfect. For example, the history of the Soviet air force, while generally accurate, is slightly unsophisticated. The authors missed entirely the impact of the purges on the strategic bombing capability of the Soviet Union. The explanation of the defeat of the French air force in 1940 is superficial. The failure of German air strategy against the USSR is slurred over. The significance of U. S. naval aviation in the Pacific is overrated. Practically all their major histories suffer from confusions in chronological sequence. The printing of dates in margins might have improved clarity for the authors as well as for readers. The bibliography is ridiculous and contains one phony book about the Luftwaffe; if there was no space for a proper bibliography, this caricature should have been eliminated. Many other shortcomings like this could be mentioned, but one must concede that within the available space the authors were in no position to chase down every fine point. On the essentials their information and their interpretation are excellent.

As a history of the world's air forces this work is unique and valuable. I know Messrs. Green and Fricker will satisfy many air researchers who are looking for historical data they cannot find elsewhere.

Lee's Artillery

THE LONG ARM OF LEE
By Col. Jennings Cropper Wise
Oxford University Press, 1959
995 Pages; Index; $10.00

Reviewed by

LT. COL. FAIRFAX DOWNEY, Artillery, USAR, *retired, author of* Sound of the Guns *and* The Guns at Gettysburg.

Colonel Wise's splendid work on the artillery of the Army of Northern Virginia now takes high rank among the much-needed Civil War reprints which have been heralding the approach of the Centennial. It belongs in such immortal company as *Battles and Leaders*, the *Photographic History*, and Henry B. McClellan on Jeb Stuart. The long out-of-print original, in two volumes, was hard to come by. It is here combined in one, which facilitates the use of the excellent index, especially valuable because Confederate batteries were not numbered, but known by the names of past or present commanders or of localities.

This book is a vivid narrative of Lee's light and horse artillery and the men who served it. It chronicles the deeds and lore of a gallant arm with the enthusiasm of one who has himself worn the crossed cannon. When Colonel Wise wrote it during 1913-14, he was Commandant of Cadets at Virginia Military Institute. He saw the four Apostolic 6-pounders, *Matthew, Mark, Luke* and *John*, so called because they "spoke a forceful language," brought back to the campus to flank the statue of Stonewall Jackson. VMI cadets had trained on those cannon in '61. Leading the guns to their post rode a white-haired veteran, Colonel Poague. With him and other surviving Southern artillerymen the author had fought over the war. Hence much of this book is a living testament, opportunity for its like now vanished.

Here is a full account of the background of Lee's "long arm," of its valor and its achievements in battle despite heavy handicaps in matériel. Failures, as at Gettysburg, are not glossed over, nor does any partisanship discount the ability of the artillery of the North. High tribute is paid the Union Chief, General Henry J. Hunt, and to such redoubtable battery commanders as Hubert Dilger of Prussia and Ohio. While the compass of this book does not include artillery in the West, in its own field it repairs the neglect by so many general histories of the gunners and the guns.

In welcoming the new edition this reviewer has only three reservations. I dislike the jacket and doubt if it attracts Civil War or artillery buffs or the casual buyer. I greatly regret the omission of the original's 26 illustrations, mostly portrait photographs. Who would not wish to know how General Pendleton looked—"Old Artillery," the Confederate Chief? (When bearded he was often mistaken for General Lee.) Or to scan the handsome, boyish features of that top horse artilleryman, the gallant Pelham, for whom, when he was killed at Kellys Ford, three maidens donned mourning and others doubtless barely refrained? Or to face the brilliant Alexander or that school-masterish-looking crack artillerist, Willie Pegram? Finally, errors noted by the author on a page appended to the first edition are not corrected in the reprint. Others, in regard to the Union artillery, specified by L. Van Loan Naisawald in his foreword to the present printing, should rather have been taken care of in the main text. But the few mistakes cannot—no more than could ditch, fence, or enemy fire—keep the Gray caissons from rolling along through these pages to the glory they so eminently earned.

"The First War"

THE GREAT WAR
By Cyril Falls
G. P. Putnam's Sons, 1959
449 Pages; Illustrated; Maps; Index; $5.95

Reviewed by
COL. FREDERICK BERNAYS WIENER, *JAGC, USAR, a practicing attorney of Washington, D. C., and occasional contributor to* ARMY.

Captain Falls, who for a number of years was Chichele Professor of the History of War at Oxford, and who wrote, in whole or in part, some five volumes of the British official history of World War I, has now published a one-volume account of what a later generation has come to call "The First War."

It is useful, compact, and readable, substantially more detailed in many respects than the similar book by the principal British historian of the same conflict, the late Brig. Gen. J. E. Edmonds's *A Short History of World War I* (see *Combat Forces Journal*, September 1951). But, on the whole, Captain Falls follows his former chief in his outline and opinions and, like General Edmonds, reflects the "official" line.

Specifically, Captain Falls is enthusiastically pro-Haig, a position which does credit to his patriotism and loyalty, if not indeed to military judgment—or to the facts.

Take 1917. Haig insisted on battling in the mud before Ypres, from July to November, long after any success was possible there and, in the final phases of the campaign, over the objections of both Plumer and Gough, the two army commanders concerned. Granted that pressure needed to be applied on the enemy to protect the French, then badly weakened by the mutinies which followed Nivelle's fiasco, why was not that pressure exerted on dry land where tanks could operate, rather than in the Flanders mud, where men, tanks, guns, and animals equally were unable to function at all? Why did Haig persist in wishful thinking about cavalry breakthroughs that never even started, when the Tank Corps came up with the obvious solution: in General Fuller's words, "that the answer to the bullet was a sheet of half-inch armor plate?" And why were thousands of men ordered to certain death in terrain that the staff never so much as looked at?

An excerpt from Leon Wolff's recent *In Flanders Fields* retells an incident that Liddell Hart first mentioned nearly 30 years ago:

"The following day [7 November 1917] Lieutenant General Sir Launcelot Kiggell [Haig's Chief of Staff] paid his first visit to the fighting zone. As his staff car lurched through the swampland and neared the battleground he became more and more agitated. Finally he burst into tears and muttered, 'Good God, did we really send men to fight in that?'

"The man beside him, who had been through the campaign, replied tonelessly 'It's worse further on up.'"

Cambrai proved what tanks could do on dry land—but there were no reserves available to exploit that success. They had all been lost in the mud of Third Ypres and Passchendaele. The hard, brutal fact of the matter is that the British 1917 campaign marked not only the nadir but indeed the disappearance of generalship. And, worse than that, the current "official" view fudges the facts.

Back in 1922, the official *Statistics of the Military Effort of the British Empire During the Great War* listed British casualties between July and December 1917 (a period that includes both Flanders and Cambrai) as 448,614, and the German casualties for the same time as about 270,000. By 1948, however, the official history said that British casualties for those campaigns had been only 244,897, while those for the Germans were 400,000. General Edmonds in his book gives the later "official" figures; Captain Falls follows his erstwhile chief as to the new British figures, but lists German losses as 260,000.

Truly, George Orwell was wrong when in his *1984* he portrayed the rewriting of history as taking place in that year; the process had begun in 1948, and indeed earlier. Lloyd George in 1934 had written, "I learn that an elaborate effort is being made to gerrymander the casualty returns—both British and German—so as to present a favourable balance sheet for this adventure."

Small wonder, therefore, that in World War II Winston Churchill kept the direction of the war in his own hands. He had seen too much of the horse-cavalry mentality, with its combination of stubbornness, blindness, and—what other word is there?—stupidity, that all but bled Britain white during 1916 and 1917. What a pity, then, that this mentality is still sought to be defended by those it injured so grievously and, it may well prove, irreparably.

Humanist's Study

ON WAR
By Raymond Aron
Doubleday & Company, 1959
163 Pages; $3.50

Reviewed by
MARK S. WATSON, *military correspondent of the Baltimore* Sun, *lecturer at the National War College, and author of the Army's official* Chief of Staff: Prewar Plans and Preparations.

Raymond Aron, the French essayist whose *The Century of Total War* brought him respectful attention on both continents, has written a humanist's study of the situation in which West and East now find themselves with their growing stocks of nuclear weapons, accumulated against a war which nobody wishes to fight. He offers no sure or easy approach to peace, observing sardonically that for some centuries the religions of salvation have taught only one secret of peace:

GENERAL OFFICER SHIFTS

Lt. Gen. ROBERT W. COLGLAZIER, JR. to DCSLOG . . . Maj. Gen. WILLIAM C. BULLOCK to Arkansas Military District . . . Maj. Gen. MARSHALL S. CARTER to Eighth Army . . . Maj. Gen. JAMES P. COONEY to USAREUR . . . Maj. Gen. JOHN A. DABNEY to OSD . . . Maj. Gen. CHARLES K. GAILEY, JR. to MDW . . . Maj. Gen. WILLIAM H. HENNIG to NORAD . . . Maj. Gen. NELSON M. LYNDE, JR. to ACofORD . . . Maj. Gen. VICTOR J. MACLAUGHLIN to ATQMG . . . Maj. Gen. DONALD W. McGOWAN to CNGB . . . Maj. Gen. ARMISTEAD D. MEAD to Chief of CA . . . Maj. Gen. JOHN G. VAN HOUTEN to Army Council of Review Boards . . . Maj. Gen. EDWIN A. WALKER to USAREUR . . . Brig. Gen. ROBERT H. ADAMS to 4th Inf Div . . . Brig. Gen. FRED P. CAMPBELL to USAREUR . . . Brig. Gen. GUNNAR C. CARLSON to ACofORD . . . Brig. Gen. ORMAN G. CHARLES to ASA . . . Brig. Gen. EARL F. COOK to DCSigO . . . Brig. Gen. CHARLES B. DUFF to OCSA . . . Brig. Gen. HALLETT D. EDSON to KMAG . . . Brig. Gen. STEPHEN R. HANMER to DCofENGRS . . . Brig. Gen. BEN HARRELL to CONARC . . . Brig. Gen. THOMAS J. HARTFORD to DTSG . . . Brig. Gen. OLIVER C. HARVEY to ODCSLOG . . . Brig. Gen. CHARLES S. HAYS to Eighth Army . . . Brig. Gen. WALTER A. JENSEN to 2d Armd Div . . . Brig. Gen. THOMAS H. LIPSCOMB to North Atlantic Division Engineer . . . Brig. Gen. ROBERT H. McCAW to USAREUR . . . Brig. Gen. BRUCE PALMER, JR. to ARWC . . . Brig. Gen. JOHN R. PUGH to Eighth Army . . . Brig. Gen. EVERT S. THOMAS, JR. to ATC (Armor) . . . Brig. Gen. LOUIS A. WALSH, JR. to USAIC.

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"They have never promised that peace would be accomplished on earth."

M. Aron gets down to business by stripping away illusory hopes that the "Faustian West . . . would . . . suddenly find wisdom when for centuries it had sought nothing but practical knowledge and power." He appears to share some of the pessimistic doubts that men incapable of outlawing atomic weapons will somehow refrain from using them in emergency: "If they are mad in peacetime, can you believe they will be sane when war breaks out?" As to hopes of halting experimentation, "Faustian man will not voluntarily halt on the road to knowledge, even if it is also the road to catastrophe."

There is no total abandonment of hope, fortunately. Rather, a recognition that there must be technological advances to provide clear and visible capability of massive retaliation—this as a warning—and also a capability with conventional weapons to discourage aggression. The author of this remarkably lucid and readable study would most of all avoid a policy leading inevitably to choosing only all or nothing.

Call to Honor, II

THE WAR MEMOIRS OF CHARLES DE GAULLE: Unity, 1942-1944
Simon & Schuster, 1959
378 Pages; Maps; Index; $6.00
CHARLES DE GAULLE: The Critical Years, 1943-1944
By Arthur Layton Funk
University of Oklahoma Press, 1959
336 Pages; Illustrated; Index; $5.00

Reviewed by
MAJ. GEN. H. W. BLAKELEY, *USA, retired, who first met General De Gaulle in Paris on Liberation Day, 1944.*

These two books, published just four days apart, complement each other perfectly. General De Gaulle's book is the second volume of his memoirs [see *Army Combat Forces Journal,* 1956] and continues to reveal his France-centered rigidity (egocentricity is hardly the word) and his dedication to his "call to honor." Mr. Funk's book is a dispassionate historical account of De Gaulle in the same period.

These are important books for all senior officers concerned with NATO problems. Together they give a balanced picture of the background, and many of the personalities, of the present French government. Mr. Funk says of De Gaulle that "he had an intense, fanatical jealousy concerning French sovereignty." Fifteen years later this characteristic is probably only slightly mellowed.

From the strictly military viewpoint, the subjects of the most interest in both books are the problems of organizing and equipping an allied force, the complications incident to governing occupied friendly territories, and the vital problem of command in an allied force. These subjects came up, of course, against the Roosevelt administration's "pattern of anti-Gaullism," but some of them might come up again tomorrow.

The arming and equipping of the French centered initially around General Giraud rather than De Gaulle. Giraud, far senior to De Gaulle, who to this day wears the uniform of a brigadier general on occasions, demanded the development of a maximum of French combat divisions with Americans taking care of supply and maintenance; the Americans wanted the French to organize a complete and balanced expeditionary force. De Gaulle, in effect, had his own private army. The "Unity" of De Gaulle's subtitle didn't come for a long time.

The method to be used in governing France as it was liberated was not clearly established when D-day arrived. The conflict between what Mr. Funk calls De Gaulle's "emphasis on French independence rather than good sense" and the necessity of the Supreme Commander controlling his combat and communication zones was, fortunately, an example of "discord at the top in contrast with general harmony at more modest levels."

The command conflict was potentially more dangerous. It is surprising that De Gaulle, a professional soldier, didn't hesitate to interfere in the operations of French troops serving under the Supreme Commander. The liberation of Paris was part of an operation of Gerow's VII Corps of General Bradley's First Army. This corps, at the time, consisted of Leclerc's 2d Armored Division and the U. S. 4th Infantry Division. There was every intention of giving the French division precedence in the liberation of their capital, but De Gaulle was impatient at what he considered unnecessary delay: "I myself intended to see Leclerc himself the next day in order to assign him his mission."

Actually, hospitality so slowed the 2d Armored that General Bradley told the 4th "to slam in and take the liberation." This speeded up the 2d, and both divisions went into Paris.

In De Gaulle's account of his meeting with Leclerc in Gare Montparnasse the impression is given that he and Leclerc were the only leaders involved. Actually, General Gerow was the senior officer present in the chain of command. General R. O. Barton, commanding the 4th Division, and at least four American brigadiers were also there. The military situation was acutely dangerous in case of a German counterattack or air attack or if serious internal disorders developed. General Gerow was clearly the responsible commander. Nevertheless, De Gaulle says in connection with future orders from Gerow that "Leclerc was to reply that he was maintaining his positions according to General De Gaulle's orders."

Similar and larger-scale refusals, or threats of refusals, to carry out orders were later to create serious problems at Strasbourg, Stuttgart, and in the Cuneo area.

In Mr. Funk's judgment, "De Gaulle's place in French history by the side of Joan of Arc, is undeniably secure," but the pattern of his relationship with the Allies "is not without elements of tragedy."

1959 REUNION CALENDAR

September

5th Inf Div: 5-7 Sept. Mark Twain Hotel, Elmira, NY. Write Lloyd A. Rader, 451 E. Clay Ave., Roselle Park, NJ.

6th Armd Div: 3-5 Sept. Hotel Sheraton, Louisville, Ky. Write Edward F. Reed, Box 492, Louisville 1, Ky.

10th Armd Div: 5-7 Sept. Penn Sheraton Hotel, Pittsburgh, Pa. Write J. Edwin Grace, 108 Langdon Ave., Watertown 72, Mass.

27th Inf Div: 25-26 Sept. Hotel Queensburg, Glenn Falls, NY. Write Lawrence Reagan, Box 1403, Albany, NY.

32d Inf Div: 5-7 Sept. Stevens Point, Wis. Write Edward T. Lauer, 8035 Stickney Ave., Wauwatosa 13, Wis.

34th Inf Div: 11-13 Sept. Sheraton-Montrose Hotel, Cedar Rapids, Iowa. Write Lt. Col. Junior F. Miller, Red Horse Armory, Des Moines, Iowa.

35th Inf Div: 18-20 Sept. Marion Hotel, Little Rock, Ark. Write Maj. Gen. Mahlon S. Weed, Box 1001, Kansas City, Kans.

36th Inf Div: 4-6 Sept. Hotel Roosevelt, Waco, Tex. Write Harold D. Loftus, Box 5068, West Austin Sta., Austin, Tex.

37th Inf Div: 4-7 Sept. Carter Hotel, Cleveland, Ohio. Write Jack R. McGuire, Room 1101, 21 W. Broad St., Columbus 15, Ohio.

65th Inf Div: 25-26 Sept. Penn Sheraton Hotel, Pittsburgh, Pa. Write Albert J. White, 712 Highland Ave., Canonsburg, Pa.

91st Inf Div: 26 Sept. (tentative), Seattle, Wash. Write Archie Walker, Drawer 2219, Seattle 11, Wash.

100th Inf Div: 11-13 Sept. Ben Franklin Hotel, Philadelphia, Pa. Write Thomas C. Burdett, 114 S. Main St., Taylor, Pa.

104th Inf Div: 5-7 Sept. Deshler-Hilton Hotel, Columbus, Ohio. Write Howard S. Bedney, 695 Hewlett St., Franklin Square, NY.

VII Corps Veterans: 20-24 Sept. McAllister Hotel, Miami, Fla. Write S. C. Hutchinson, 706 Lafayette Ave., Colonial Heights, Va.

October

11th Abn Div: 16-18 Oct. Hotel Commodore, Atlantic City, NJ. Write Louis Goran, 68 Lexington Ave., New York 10, NY.

45th Inf Div: 30 Oct-1 Nov. Skirvin Hotel, Oklahoma City, Okla. Write Richard M. Thomason, 2205 N. Central, Oklahoma City 5, Okla.

November

77th Inf Div: 8 Nov. Sheraton-McAlpin Hotel, NYC. Write Joseph H. Woolwich, 28 E. 39 St., New York 16, NY.

82d Div (WWI): Second, 8 Nov. Hotel Dempsey, Macon, Ga. Write James F. Brown Jr., 1005 Bankers Ins. Bldg., Macon, Ga.

90th Inf Div: 6-8 Nov. Kansas City, Mo. Write Samuel W. Fry, Tulsa Co. Court House, Tulsa, Okla.

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The Association of the U. S. Army shall be an organization wherein all who are in accord with its objectives may join in the exchange of ideas and information on military matters, and in fostering, supporting, and advocating the legitimate and proper role of the Army of the United States and of all its elements, branches, and components in providing for and assuring the Nation's military security.

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CHAPTERS

ALAMO CHAPTER—Cocktails and dinner preceded meeting held on 30 June. Assembly viewed "A Sharper Sword and a Stronger Shield," and heard talks by Hon. J. Edwin Kuykendall, Mayor of San Antonio, and Lt. Gen. G. S. Meloy, CG Fourth Army. Business portion heard committee reports, and selected representatives to attend AUSA's 1959 Annual Meeting. A Committee on New Projects, and one on Legislative matters, were appointed.

COLUMBUS-PHENIX CITY-FORT BENNING CHAPTER—Board of Directors met on 17 June to consider participation in AUSA Annual Meeting, including recommendations for resolutions and for national awards. All committees reported, adding up to impressive amount of effective work for national defense.

HAWAII CHAPTER—Dinner meeting on 9 July heard Dr. Wernher von Braun, ABMA, speak on missile developments, including possibility that missiles may be used to transport men and equipment. Chapter has appropriated $200 to provide prizes for Active Army units in Hawaii which contribute most to U. S. Army.

HENRY LEAVENWORTH CHAPTER—Third Annual Membership meeting on 9 May drew more than 500 to hear Dr. Franklin D. Murphy, Chancellor of the University of Kansas, speak on "A Need to Think." Chapter Certificates of Appreciation were awarded to Maj. John R. Beckett, 481st Chemical Battalion, USAR, and Lt. Col. Clarence E. Stephens, 3d Battalion, 353d Infantry, USAR, for 100 per cent unit membership.

INDIANA CHAPTER—Film, "A Sharper Sword and Stronger Shield," concluded business meeting on 2 July. Chapter has submitted several resolutions for consideration by National Resolutions Committee.

McCOY RED-CLOUD CHAPTER—New officers elected at meeting on 30 June held at Camp McCoy.

MID-PALATINATE CHAPTER—Lt. Col. T. J. Cunningham, Jr., Assistant Editor, European Edition of *Stars and Stripes*, gave an interesting "inside" view of the soldiers' newspaper at meeting on 13 July, held at Kaiserslautern NCO Club.

NEBRASKA CHAPTER—Board of Directors meeting on 26 June agreed to include six counties in Iowa, in response to National request, to consider change in Chapter name, and selected delegate to AUSA's 1959 Annual Meeting.

NEW ORLEANS CHAPTER—New officers elected at meeting on 24 June; membership is rising.

ORLEANS CHAPTER, APO 58, New York, N. Y.—New officers elected on 29 June; President is Col. David M. Scott, Jr., Hq. 3d Logistical Command.

PIKES PEAK CHAPTER—Chapter continues its efforts to obtain legislation of value to the Army by remaining in constant contact with Colorado Representatives and Senators, and with other chapters.

POCONO MOUNTAINS CHAPTER—New officers elected on 15 July at meeting at Tobyhanna Signal Depot. Col. Charles Fell, Ret., was principal speaker; Maj. Gen. T. L. Hoban was honored

FORT KNOX, KY. Maj. Gen. W. Paul Johnson, CG, USA Armor Center, addresses the June meeting of Kentuckiana Chapter on 22 June.

FRANKFORD ARSENAL, PA. William Courtenay, British war correspondent, points out Berlin areas to Brig. Gen. Elmer L. Littell, CG, Signal Supply Agency, and Brig. Gen. James A. Richardson, III, CG, Frankford Arsenal. Mr. Courtenay addressed William Penn Chapter on the Berlin crisis at its meeting of 4 June.

LOS ANGELES, CALIF. Assistant Secretary of the Army George H. Roderick (second from left) at Los Angeles Chapter's reception at the California Club, 10 June. With him are Lt. Col. Jack M. Warner, Jr., Chapter President; Maj. Gen. H. N. Toffoy (who appeared on "This is Your Life") and Don Belding, member of AUSA's Board of Trustees.

FORT BENNING, GA. AUSA was well represented at the 28th Joint Civilian Orientation Conference during 8-10 May. Left to right: William S. Bigham, President of Central Texas-Fort Hood Chapter; Maynard R. Ashworth, President of Columbus-Phenix City Chapter; James S. Beckman, President of Ozark Chapter; Lt. Col. Jack M. Warner, President of Los Angeles Chapter.

DENVER, COLO. Part of the head table at the Organization meeting of Denver Centennial Chapter held at Fitzsimons AH on 23 April. Left to right: Maj. Gen. Derrill M. Daniel, CG, XVI Corps; Brig. Gen. Robert D. Charlton, President; Maj. Gen. John F. Bohlender, Fitzsimons CG.

HARTFORD, CONN. Lt. Gen. Walter L. Weible, AUSA's Executive Vice President (right), presents Charter of Connecticut Chapter to its President, Maj. Gen. Elmer S. Watson, on 22 May. Others are, left to right: Maj. Gen. S. C. Wooten, CG, XIII Corps; Maj. Gen. F. S. Reincke, State AG; Maj. Gen. Robert W. Berry, CG, 1st Region, USARADCOM.

FORT CHAFFEE, ARK. New officers of Ozark Chapter installed at recent meeting. Left to right: Major Richard L. Cook, Second Vice President; William Eads, Jr., First Vice President; James S. Beckman, President; James H. Clendening, retiring President; MSgt. Daniel A. Reed, Secretary-Treasurer.

guest. VFW presented the Chapter a certificate for a 50-star flag, to be honored when available from the manufacturer.

POITIERS CHAPTER—New officers elected on 8 June; Lt. Col. John J. Williams is new President.

SAN BERNARDINO COUNTY CHAPTER—Mr. Hugo W. Wilde re-elected President at Second Anniversary Meeting on 19 June. Members discussed decentralization program because of wide-spread area covered by the Chapter, and the institution of an awards program to build interest. Lt. Col. Jack M. Warner, Jr., President of Greater Los Angeles Chapter, was principal speaker.

SOUTH FLORIDA CHAPTER—New officers elected and installed on 1 June at Dade County Armory. Principal speaker was Col. Edwin P. Preston. Chapter passed resolutions of support for Army manpower needs and modernization.

SOUTHWEST OKLAHOMA CHAPTER—Col. E. C. Williams, President, presented a 49-star flag to Maj. Gen. Verdi B. Barnes, CG of Fort Sill, at a Fourth of July ceremony held on the post. More than 3,000 persons attended the Chapter-sponsored celebration on the post, which featured contests, entertainment (featuring movie star Russ Tamblyn), games, picnic supper, and fireworks.

UTAH CHAPTER—Charter meeting on 26 May featured Lt. Gen. Charles D. Palmer, CG, Sixth Army, speaking on "One Army." Governor Clyde welcomed the Chapter to Utah; representatives of Regular Army, National Guard, Army Reserve, and the civilian population made short addresses.

WASHINGTON STATE CHAPTER NO. 1—Well-programmed meeting on 10 July honored Mr. Frank S. Baker, publisher and owner of the *Tacoma News-Tribune*, who spoke to the audience of more than 150 members, guests, and wives, on the recent history of Fort Lewis and its relations with the community. Chapter awards and mementos were presented to Mr. Baker and others, including Col. Edgar Wright, Jr., deputy post commander. Delegation to AUSA's 1959 Annual Meeting was selected.

ROTC COMPANIES

IDAHO STATE COLLEGE COMPANY—Informal meeting held at Fort Lewis for members attending summer camp. Guests included Lt. Stanley R. Olson, first Captain of the Company, and the man who, as a cadet, received the charter from Mr. John Slezak, then President of AUSA; and Capt. Raoul R. Ashby, formerly Assistant PMST at Idaho State. Camp reactions, and plans for sending representatives to AUSA's 1959 Annual Meeting, were principal items discussed.

PUERTO RICO ROTC COMPANY—Charter presented on 21 May by Col. Manuel Font, President of Antilles Chapter, at impressive ceremony that received wide newspaper, radio and television coverage.

ST. LOUIS, MO. Members of St. Louis Chapter describe symbols of their plaque for Assistant Secretary of the Army Courtney Johnson (center), guest speaker at second luncheon meeting. With him are, left to right: Maj. Gen. L. J. Sverdrup, President; Maj. Gen. C. D. W. Canham, CG, XI Corps; Brig. Gen. W. B. Bunker, CG, Transportation Supply & Maintenance Command.

FORT ORD, CALIF. Secretary of the Army Wilber M. Brucker is applauded after his address at luncheon held in his honor by Fort Ord and Tri-County Chapter on 1 May. Others at head table are, left to right: Rear Adm. E. E. Yeomans, Joe Fratessa, Chapter President; Maj. Gen. Carl F. Fritzsche, CG, Fort Ord; Lt. Gen. Charles D. Palmer, CG, Sixth Army; and Joe Juri, Chapter Vice President.

POCATELLO, IDAHO. Cadet Sergeant David Rudkin of Idaho State College Company explains use of PRC-10 radio to visiting high school senior during Campus Day, 17 April.

FORT LAWTON, WASH. Officers installed at Charter meeting of University of Washington ROTC Company on 29 April. Left to right, standing: Dennis v. H. Wilkins, First Sergeant; Michael K. Williams, First Lieutenant; George W. Sinnott, Captain; Frederick L. Yeatts, Second Lieutenant; Ronald C. Finlay, Sergeant. Seated: Major Deward W. Sims, Faculty Adviser; Lt. Col. Herbert T. Condon, Jr. and Major Joseph D. Moholy, both Assistant PMST.

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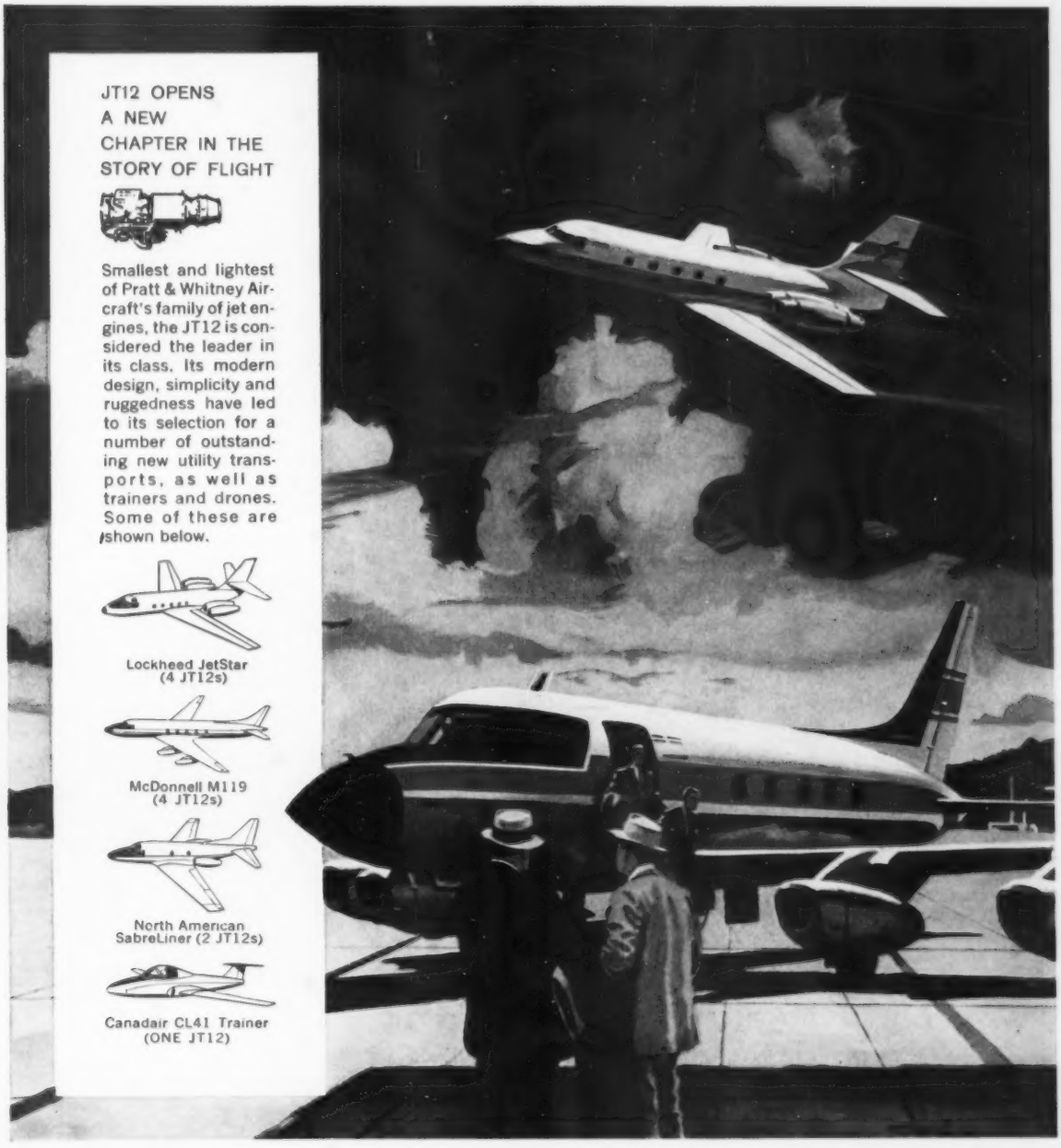

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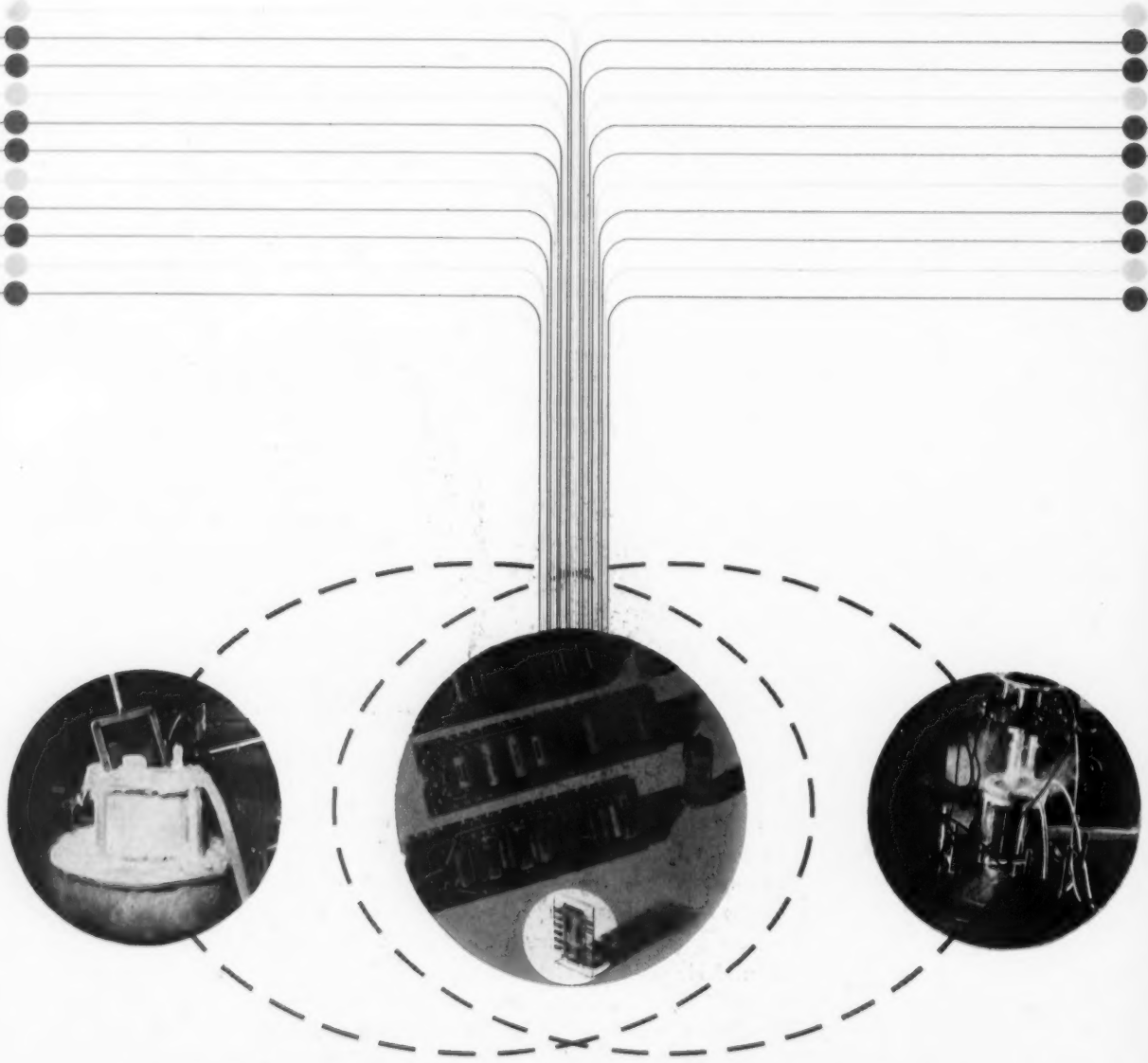

In center, conventional circuitry is contrasted with equivalent cryogenic device (in white circle). Left and right photos show details of specially designed apparatus used to achieve low temperatures for superconductivity.